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THE AUTOMOBILE

VOL. XII. NEW YORK—SATURDAY, FEBRUARY 25, 1905—CHICAGO NO. 8

POWER BOAT SHOW ON IN NEW YORK.

National Exhibition in Madison Square Garden Opened by Naval Officers—Notable Tendency Toward Fast Pleasure Launches—Unworthy Hull Designs Disappearing.

THE opening of the National Motor Boat Show at Madison Square Garden last Tuesday night disposes finally of a question long unanswered: Why New York, the great yachting center of a pre-eminently yachting nation, could not support an annual yachting exhibition? An answer to this question is no longer necessary, as it is plainly evident that the Motor Boat Show will be in the future as much a permanent institution as the Automobile Show, appealing largely to the same classes in both sport and trade. Why the coming of a representative nautical exhibition was so long delayed is now a matter of no moment, and why it has at last arrived is easily told. Within the past three years a tremendous impulse has been given to the power boat in various types through the introduction of the autoboat, with its phenomenal speed, and through the great improvement in the marine gasoline motor, due to the development of the same type of motor in the automobile. The increased field of utility for the ordinary launch motor, and the new line of sport opened by the autoboat have brought many new patrons, and the trade has been encouraged by the growing demand for more, for better, and, in particular, for lighter and more powerful motors.

UNDER ENGINE AND BOAT MAKERS' AUSPICES.

As the direct result of the autoboat races of last summer the National Association of Engine and Boat Manufacturers was organized, for the promotion of the interests of the trade, there being already in existence the American Power Boat Association, for the direction of the sport. As one of its first tasks, the manufacturers' association took up the question of an annual exhibition, following the lines of the Automobile Show, deciding that there should be but one such show in New York. After a conference with the management of Madison Square Garden and the Sportsmen's Exhibition Company it was decided to hold the show at the Garden in connection with the annual Sportsmen's Show, of which exhibition boats and launches had long been an incidental feature.

In the arrangement of the Garden for the present show the nautical interests have had full sway. The traditional decorations of cedar and spruce are still seen everywhere, and the daring explorer who ventures to the remote recesses of the second balcony may discover a few scared squirrels, raccoons and a couple of baby bears, but almost every other part of the main hall is given up to launches and launch fittings.

EXCELLENT ARRANGEMENT OF GARDEN.

Before the last sad yelp of the dogs departing from the Dog Show was heard last week, busy workmen took possession of the Garden, the kennels were thrown out, and within the great oval of the amphitheatre a mammoth tank was constructed, with a circumference of one-twelfth of a mile. Outside of the tank there was left space for a line of launch exhibits along the fronts of the boxes and a narrow promenade, and in the center of the tank a long, narrow island was built; thus most of the floor space was devoted to water. A wide gallery built over the lower tiers of boxes made a second promenade, with exhibition spaces at the back, and the second balcony was also utilized for the fittings and small exhibits. The fly-casting, which is always an interesting feature of the Sportsmen's Show, was very ingeniously provided for by the building of a long, narrow rustic bridge over the island, this being reserved for the competing fishermen, who disturbed nobody, and at the same time had a good place for their sport. The island was utilized for some of the launch and motor exhibits, in particular Smith & Mabley and the Panhard, and also as the embarking point for the launches *Buster Brown* and *Tige*, which carry children around the lagoon. Two graceful bridges of rustic work connect the island with the main floor, the launches passing beneath.

The larger launch exhibits, of the Standard, Seabury, Lozier, Williams-Whittelsey and other hull builders, were ranged around the promenade on the main floor, while across the Fourth avenue end and under the balcony, the space on the main floor was devoted to exhibits of motors only, special arrangements being made by which all exhausts were piped to one large main in the rear. Many exhibitors availed themselves of this opportunity to show the motors in motion, and often with propellers running in glass tanks.

The one decorative feature which distinguishes this show from all others at the Garden is the liberal use of bunting in the form of yacht club burgess, national ensigns and code flags, these being hung by hundreds from the dome, and also from the balconies. More than 200 yacht clubs of the United States and Canada are thus represented, and each night of the Show, from February 21 to March 9, is set apart for certain of these clubs.

OPENED BY REAR ADMIRAL COGHLAN.

The honor of opening the Show was deputed by Secretary of the Navy Morton to Rear Admiral Joseph H. Coghlan, U. S. N., in command of the Brooklyn Navy Yard, who was accompanied by Naval Constructors W. J. Baxter and D. J. Nutting, and Lieutenants F. L. Chadwick and R. H. Robinson. After dining with the officers of the association, the party took their places on the rustic bridge at the east end of the lagoon. With the naval officals were J. J. Amory, president of the association; Vice-Presidents Lozier and Sutphen, and Secretary Gamble. After a brief address upon the development and the future of the motor boat and the desirability of the encouragement of all forms of sport, Admiral Coghlan declared the Show open, and the lights were turned on, disclosing a crowd which at that early hour filled every foot of standing room. Among those present were General Frederick Dent Grant, U. S. A., and Rear Admiral Melville, U. S. N., with the commodores of some forty yacht clubs and many well-known yachtsmen from

New York and the Sound ports. The throng was so dense that it was difficult to make headway and impossible to see anything of the different exhibits, except in the way of a general view from the balcony.

Taken as a whole, it may be said that the Show was complete on the opening night; practically every stand was filled, and many of the motors were running or ready to run on the following morning, but in matters of detail there was still much to be done at the time we go to press, and for this reason, as well as because of the large number of exhibits, it is necessary to postpone all critical mention to next week. Not only do the exhibits largely outnumber those at all previous exhibitions, but there is much that is worth careful study in both hulls and motors.

Speed Boats with V Transom.

In hull design, it is gratifying to notice the disappearance of that senseless freak, the torpedo stern, something for which there is no nautical nor structural justification in a wooden vessel of any size, least of all in a small pleasure launch. Not unnaturally, the new speed boats are largely copied after the *Standard*, affecting in particular her peculiar V transom. In the ordinary pleasure launches there is evident a tendency toward the whaleboat, or lifeboat type, with both bow and stern sharp on deck, though in many cases this has progressed no further than a very full and ugly round stern. Bad as this is, it must be taken as an improvement on the torpedo stern, and a promise of something better in the future.

The remarkable collection of crude and experimental autoboats seen last year has, fortunately, disappeared, the only reminder being the famous *Hard-Boiled-Egg*, which, after being very badly beaten, in spite of its name, has turned up in the tank under a new name, the disguise being easily penetrated. Few of the extreme racing type are shown, but these are greatly improved in model, largely on the lines of the *Standard*, and the construction and fitting-up are better. More attention is given this year to pleasure launches of moderate proportions and weight and yet of high speed, though not designed for racing. Closely allied with this class is the power yacht tender for large steam yachts, several of which are shown, with square transoms of the conventional yacht boat type.

Fast and Serviceable Launches.

There is likely to be a demand for some indefinite time to come for racing launches of the highest possible speed, regardless of cost, comfort and durability; but the popular demand promises to be for safe, comfortable and serviceable launches of seventeen to twenty-mile speed, rather than an occasional twenty-three to twenty-six miles. The tendency of hull design and construction, and also of engine design, are toward the production of this type. But few of the very cheap launches are shown, the collection varying from good boats at moderate prices up to high grades of work at special figures.

The Smith & Mabley exhibit includes a handsome yacht tender in the water, and also duplicates of the eight-cylinder motor of the *Challenger* and the four-cylinder motor of the *Vingt-et-Un III*. The Panhard & Levassor Company shows a new racing autoboat of 40 feet length, built by the Electric Launch Company, and fitted with a 60-horsepower Panhard motor, the hull handsomely finished in aluminum paint. The Electric Launch Company shows another similar autoboat, also equipped with a Panhard motor, and in the water is a 30-foot electric launch, very elaborately fitted with awnings, cushions, curtains and armchairs. A striking feature of this exhibit is the new mercury arc rectifier, a form of electric light by which the alternating current is transformed for charging the ordinary launch battery.

The Gas Engine & Power Company and C. L. Seabury & Company have an extensive exhibit of Speedway motors of various sizes, the smaller two-cycle, and of the Naphtha and Speedway launches, one of the latter, of the speed type, being shown on the platform, with a larger launch of the yacht-tender type in the water. The Lozier Motor Company shows a number of its two and four-cycle motors and several launches, one of about 30 feet running in the lagoon.

Gas Engine Yacht Tenders.

The Standard Motor Construction Company shows a handsome mahogany yacht tender, with one of the 24-horsepower automarine Standard motors installed well forward, the boat being afloat. Various sizes and styles of the Standard marine motor are also shown. The Buffalo Gasoline Motor Company shows a number of its high-speed motors on the floor, and one running in the Bison speed launch. The Williams-Whittelsey Company is a new concern, succeeding the Standard Motor Company, of Steinway, Long Island. The principal feature of its exhibit is a handsome yacht tender, of mahogany throughout, with stern of the Standard type; a smaller launch of similar model and equally good finish is shown in the lagoon as a part of the exhibit of the E. H. Gotschalk Company, agent for the Giant motor, one of which is installed in this hull.

The Craig motor is well represented by the new eight-cylinder machine tested so successfully in the *Onontio* last fall, and also by the heavier type of Craig motor, designed on the same principle for ordinary service. The Palais de l'Automobile shows the launch *La Manola*, well known on Long Island Sound from her performances of last summer, and also, on the stand, a new mahogany yacht tender built by B. F. Wood, of City Island, and equipped with a 24-horsepower Renault motor. This company handles the Panhard, Renault and several other makes of French automobile and marine motors, and the 24 and 60-horsepower Panhard are shown.

The Truscott exhibit is marked by a sort of "family tree," a standard of iron pipe, with arms extending horizontally, each pair of arms bearing a pair of Truscott marine motors, the larger below and the smaller above; the effect is odd and striking.

Interesting Motor Exhibits.

The engine exhibit includes a very large number of the well-known makes, as shown in the complete list of exhibitors published last week. Most of the exhibits show at least one motor in operation. On the opening days only a few of the launches and motors bore cards giving sizes, prices, etc., and as there were not enough attendants always at hand to answer questions, much time was lost in obtaining information. It would be to the advantage of every exhibitor if every article on his stand were plainly placarded, so that inquirers might satisfy themselves as to the leading points before wasting their own time or that of a salesman in asking the ordinary preliminary questions of dimensions, weight and price.

One unpleasant feature of the opening night and the following day was the offensive and entirely unnecessary exhaust from the launches in the lagoon, several of which seemed to be run with the idea of obtaining the maximum of exhaust for the minimum of speed. At times the main promenade was thick with foul vapors, blown directly into the faces of spectators. This of itself is a needless advertisement of the most objectionable feature of the gasoline motor, and each exhibitor, for his own sake, should use every possible means to avoid it.

The exhibit of yacht and launch fittings, electrical appliances and other essentials of the pleasure launch is very complete, and the Show as a whole cannot fail to interest yachtsmen.

There is a promising market in Sweden for small gasoline motors suitable for installing in rowboats, according to Robert S. S. Bergh, United States Consul at Gottenborg, Sweden. They must be cheap, however, as otherwise the people who would be the readiest purchasers could not afford the outlay. He also states that some of the American marine motors that have been sent to Sweden have required so much work to get them into running order that considerable injury has been done to the business. The motors that have given the best satisfaction are too expensive, as a rule.

A stiff toothbrush and a little gasoline will soon remove soot from spark plugs, under ordinary circumstances. If the deposit is hard, it may be scraped off with a knife.

French Auto Boats and Motors.

From Our Own Correspondent.

PARIS, Jan. 18.—The building of automobile boats has assumed important proportions in France, many of the leading makers of automobiles and automobile motors being interested in racing on the water as an additional means of attracting attention to their work. The motor boat in various types figured conspicuously in the recent Paris Show, a part of the Serres de la Ville, on the banks of the Seine, being devoted to the boat exhibit; while, as already reported, races were held in spite of the cold weather.

Prior to the advent of the speed launch Paris and several other French cities could boast of some very skilful designers and builders of sailing yachts, mostly racing craft of the small classes; these builders have of late found a new and larger field in the auto-boat. Among the most prominent are Tellier Fils & Gérard, the new firm succeeding to the business established by the senior Tellier; G. Pitre & Cie, Maisons-Lafitte; G. Seyler; Vallet; Lein; Société La Marguerite; and the Chantiers de Constructions Navales d'Antibes, near Marseilles. Most of these yards are small, especially in comparison with the leading establishments in the United States.

In the boats shown at the Salon there was a general uniformity of model, following more or less closely the Normand type of torpedo boat, but with modifications of the stern and other parts to suit the altered size and conditions. The workmanship generally was plain, but exceedingly workmanlike. Little attention was paid to elaborate finish and varnishing; the fittings and details were carefully designed, shipshape in appearance, and intended for use. In addition to the professional designers and some amateur yachtsmen, constructors of the French navy have been encouraged by the Government to interest themselves in the subject, and some of them have been very successful. With over one hundred entries now recorded for the races and other contests at Monaco in April, there is an ample field for designers. While the auto-boats figure most prominently, all classes of pleasure and cruising launches, davit launches (*canots de bossoir*) and fishing-boats with power are represented in the different race programs of the season.

Tellier-Panhard Launches.

As one of the first in the field and carrying the Panhard motors, the Tellier launches are among the best known, and the firm had a fine display. Naturally the most prominent feature was *La Rapée III*, the 25-ft. boat which has made over 26 miles per hour on long courses. She is of double-skin construction, with fairly deep forefoot, and full round lines, high turtleback forward, open cockpit and high coaming.

The motor of *La Rapée*, of 110 horsepower, is a duplicate of that in the Panhard car which won the Vanderbilt cup, the well-known Centaure Legere type, built for the past three years, but with all the latest improvements.

The heads are separate from the cylinders and are cast in iron, while the cylinders are bored and turned outside from a forged steel block, with copper jackets, the edges sunk in grooves which are filled with melted solder. This construction is said to cost $400 more per engine than the usual method, and the Panhard people advise it only for racing machines, and consider it as unsatisfactory for machines which have to produce a continuous work like a touring machine. The valves, of large diameter, are situated on each side of the head and are interchangeable. They are operated by two separate camshafts with individual cam cases of very small dimensions for each cylinder, the camshaft running exposed between these, that is about three-quarters of its total length. Four special brackets, different from the usual car type, are cast with the upper part of the crankcase and hold the engine on its bearers.

The carbureter, of the Krebs variety, is held on a fifth bracket also cast on the casing, and which projects from between the two central cylinders. Each cap over the valves is held by a forged bridge piece bolted at each end so that two nuts have to be slacked off to get at the valve. A large round inspection plate is provided on top of each head for the jacket, wherefrom the water flows outboard. The plugs, sparked by the Eisemann high-tension magnet, are screwed horizontally into the inlet valve chambers. The two-to-one gears are spurs, cut from steel, very light and narrow, and entirely unprotected.

Provision is said to be made, by transverse ribs cast between each cylinder in the lower part of the crankcase, to keep the oil from running at once to the lower end of the crankcase, separate drain plugs being fitted for each compartment. The starting is made from the fore end of the long cockpit, where a mechanician is stationed who merely watches the engine running and the working of the lubrication. The starting handle is fixed to an upper thwartship member of the hull right above the engine, and drives down to the shaft by a short roller chain. The valve springs are conical and are fixed on the valve stem by twisting their lower end into a hole through the stem.

The engine drives through a planetary reverse gear to the propeller shaft, supported at its outer end by a V-bracket. The thrust bearing runs on balls. A three-way cock allows the pump to empty the water from the bilge or to pump from the outer water. The engine is placed about one third of the length of the boat from the stern.

The exhaust is direct into the atmosphere by a large pipe which leads from the after cylinder out board, no other device or protection being provided, except a few turns of asbestos cord for prevention of charring by the extreme heat. For the same purpose steel plates lined with asbestos board are screwed about one-half inch from the woodwork on the exhaust side of the engine, which comes very close to the hull sides.

The gasoline tank is at the extreme after end of the boat under the short deck, and the fuel is forced to the carbureter by exhaust pressure.

The exhibit included an open cruising boat and a smaller pleasure launch, both fitted with folding hoods of the automobile type.

Trèfle-à-Quatre.

This famous auto-boat which shares many of the honors of the year with the Richard-Brasier car which won the Gordon Bennett cup, carries the sister motor. The hull, which was on exhibition for but a short time, being afloat most of the time, was designed and built by G. Seyler, differs from the accepted type of French auto-boat, the topsides being tumbled home and so cut away as to minimize the air resistance at a sacrifice of surplus buoyancy. While *La Rapée, Lutece, Hotchkiss* and many other boats show a good freeboard with flaring sides and a bold high bow with full forward deck lines, designed to carry them over the seas. *Trèfle-à-Quatre* is simply designed to plow through water or air indifferently with the least possible resistance; incidentally, this form involves a saving of total weight and a lowering of the center of gravity of the hull. The steering is done by a wheel, with rudder yoke and steering lines over the after-deck.

With a length of just under 40 feet, she carries about the same weight and horsepower of motor as *La Rapée*, but of very different construction. The cylinders are cast in pairs, the jackets being cast integral with them; the valves are all on the same side of the engine, the exhausts being the outside ones of each pair of cylinders, and the inlets opening from the same chamber into their respective cylinders, occupying the central position.

The piping is thus made very simple; from each exhaust chamber a short pipe not a foot long goes right through the sides of the hull and exhausts direct in the air, while two short elbows lead from the two inlet chambers into the carbureter mixing chamber, making no more than two to three feet of inlet pipes. There are two throttles, one at the end of each inlet branch; in the cylinder castings they are naturally connected together by a light flat rod. The valve caps are screwed direct into the cylinders above each valve, separate kerosene cocks being provided for the loosening of each piston in case oil causes them to gum up after cooling. There is

only one water outlet pipe from the top of each pair of cylinders, as well as one water inlet on the side opposite to the valve.

The cylinders are very short, making a very low engine when taken as a whole, hardly visible when the boat is afloat. Each cylinder casting is held down to the crankcase by means of six bolts with castle nuts. The crankcase is of aluminum, as in all French boats, where very little attention is paid to the action of the salt water on this metal; it is, however, protected by a coat of paint. The crankshaft has but three bearings, as usual in this type of engine, and they are plain bearings. The ignition is by make-and-break from a magneto, the igniters being of the well-known Brasier water-cooled variety, without spark advance, the control on the engine being exclusively through the throttles. The timing gears are fiber-lined and entirely enclosed, in a manner very similar to that used on the Clement-Bayard Cars. Right abaft the after-cylinder and across the engine is a very light stamped steel beam, drilled out for further weight reduction, which carries the mechanical force-feed oiler, driven by bevels from the camshaft, one lead going to each cylinder in the lower part of the piston travel, and two to the upper part of the crankcase.

The drive is as in the Panhard boat through a planetary reverse gear, a very short universal joint following, and then the thrust bearing. The engine pump only acts as a circulating pump, the bilge water being emptied by a small rotative pump, which is handled by the assistant. The control of the mechanism is, as usual here, within reach of the helmsman. The steering on this boat is exclusively by wheel, the very long sloping rear deck not allowing a tiller.

The boats of Dalifol & Cie. are of all types, fitted with the Abeille motor, the one shown was of the Dolphin type, so well known in the United States, the sides vertical and meeting the V-shaped bottom at an angle. Unlike the real *Dolphin*, the after body is also of a flattened V form, but not absolutely flat. This boat is 21 feet long, with a four-cylinder 24-30 motor.

In the Abeille engine the valves are symmetrical on each side of the cylinders, which are cast separate and in one piece. There are five inspection plates to each cylinder, one on top and four others, one on each face of the valve chambers, these having been provided for easy removal of saline deposits, in case of sea cruising work. The piping is very simple, but is defective inasmuch as no provision has been made for equal resistance to the inlet of the gases in each cylinder. The commutator, driven by bevel gears from the inlet camshaft, is very accessible. There is a bearing between each throw of the crankshaft, and the two-to-one gears are enclosed in the crankcase, without any separation, so as to use the splash of the crankshaft for lubrication. The pump-driving gear is also enclosed in the same way, and the pump itself is bolted direct on the crankcase.

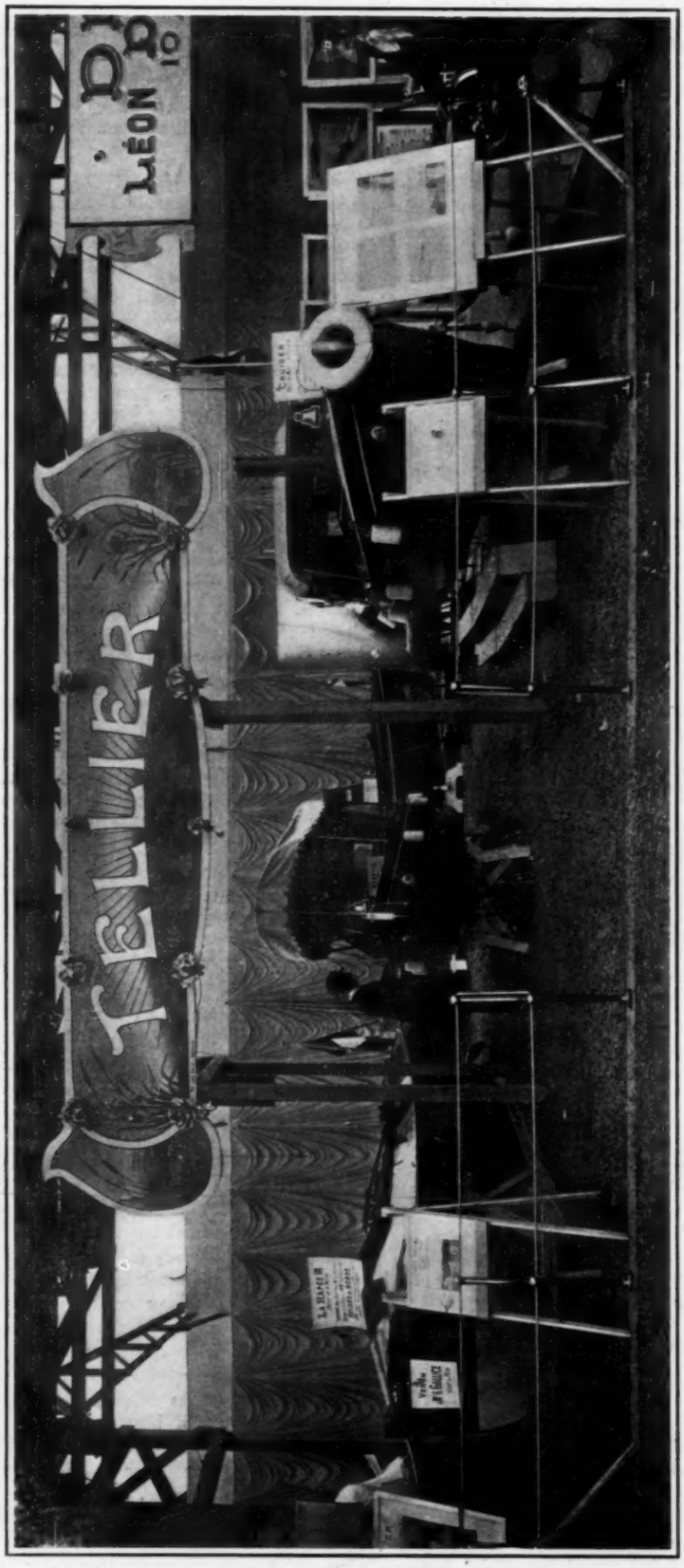
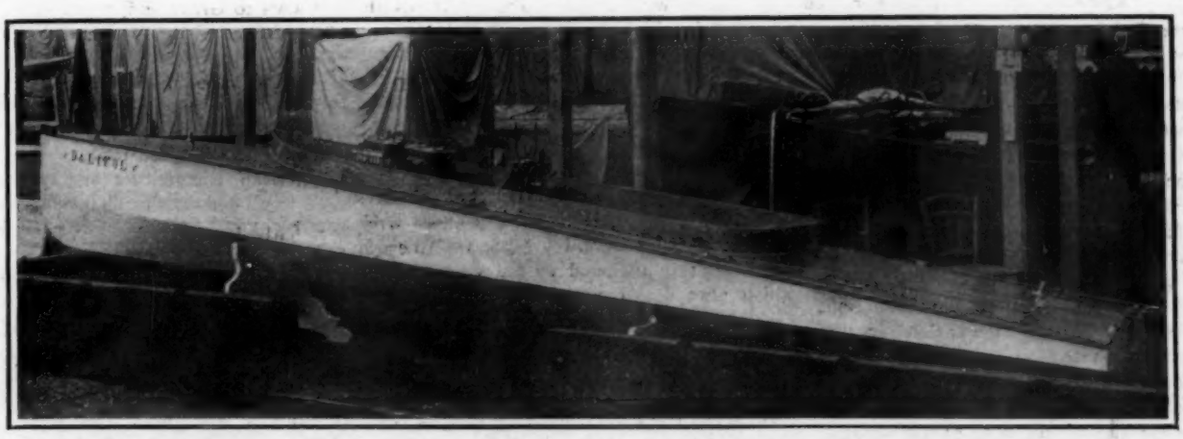
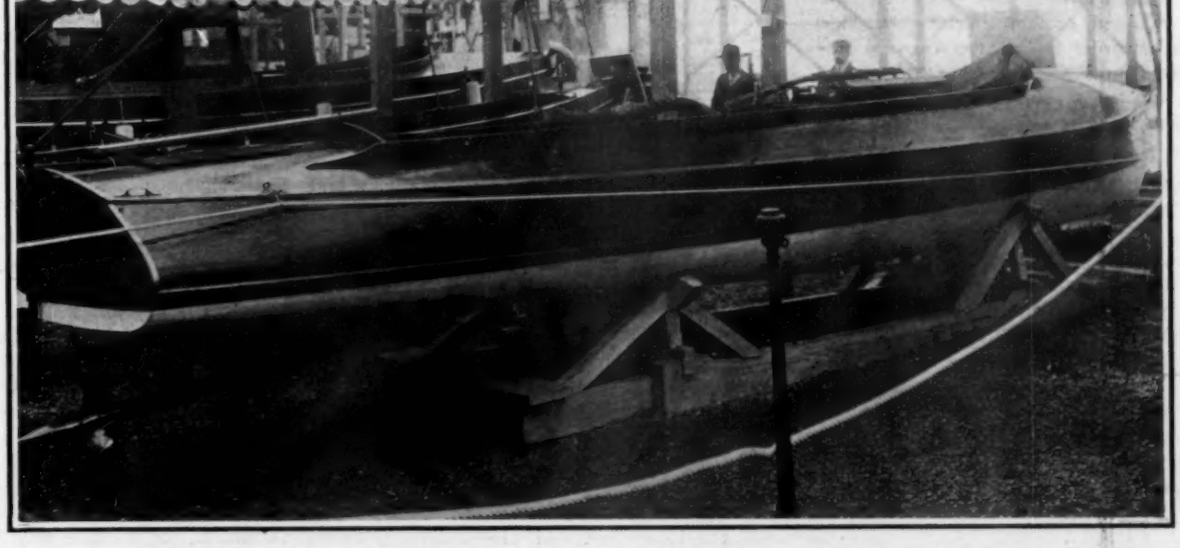


EXHIBIT OF TELLIER-PANHARD MOTOR BOATS AND LAUNCHES AT THE PARIS SALON—"LA RAPEE III," FITTED WITH 110-HORSEPOWER PANHARD MOTOR SHOWN IN LEFT FOREGROUND.

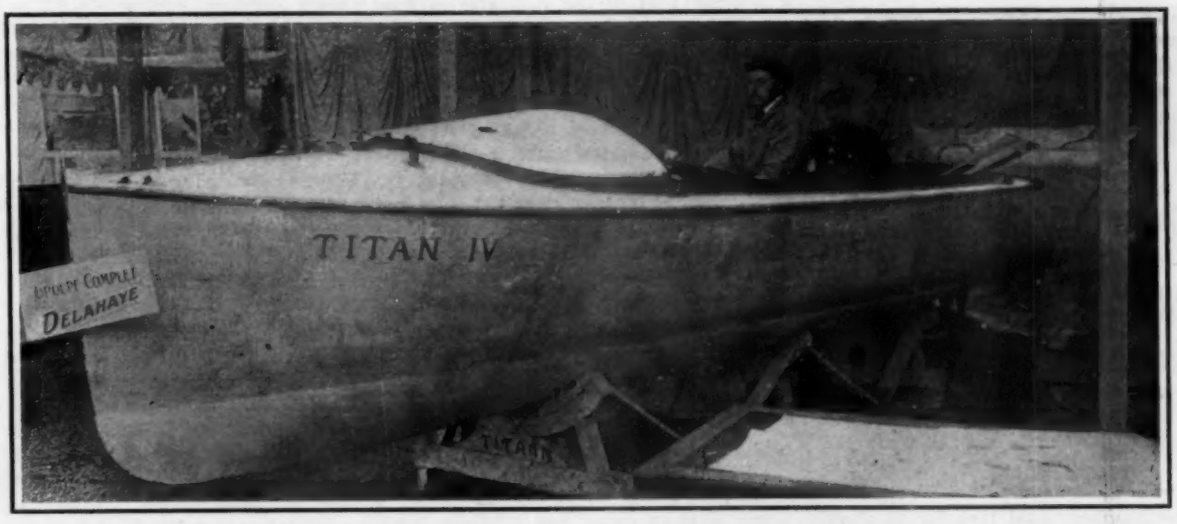
The well-known *Titan IV.* was shown by the Delahaye company, the makers of the engine; the hull being by G. Pitre & Cie.; the form of hull is clearly shown in the illustration; she won the prize in the cruiser class in the Seine races.



THE "DALIFOL," FITTED WITH A FOUR-CYLINDER 24-30 HORSEPOWER ABEILLE MOTOR, SHOWN BY DALIFOL & CO.



"LA RAPEE III," 25-FOOT TELLIER-PANHARD BOAT, WHICH COVERED 26 MILES AN HOUR OVER LONG COURSES.



"TITAN IV," FITTED WITH DELAHAYE MOTOR, PRIZE WINNER IN CRUISER CLASS IN THE RACES ON THE SIENE.

At the Delahaye stand were also shown engines especially built for boat work, but not fitted into hulls. These engines are of a great variety of styles, but are all made for use with kerosene, by means of the Claudel carbureter.

These engines follow the lines of last year's car engines by the same makers with a few changes to make the crankcase pattern better adapted to boat construction.

The inlet valves are automatic and placed directly above the exhaust. The lubrication of the engine is, outside the carbureter, the most noticeable feature. The oil pipes to the cylinders open a little above the lowest point of the piston travel, and it is claimed that when the piston reaches the lowest point of its aspiration stroke it sucks into the cylinder a drop of oil which the motion afterwards distributes on the walls, while during the compression or explosion strokes a small, automatic check valve keeps the oil from being driven back into the tank by the cylinder pressure. Two sets of exhaust cams are fitted, so that when the spark is retarded in order to start the engine a special starting cam comes under the exhaust valves and keeps them open during a portion of the compression stroke.

Hotchkiss Model.

The first prize of the show, the Coupé du Salon, was won by the Hotchkiss, the hull by G. Pitre & Cie., and the motor of the Hotchkiss car type. As in her previous successful races of the year, she was steered by Henry Fournier, from the after cockpit, using the long tiller shown in the illustration. The design shows good lines of the conventional French form, the topsides tumbling home quickly aft with a square transom. A wheel is fitted forward for steering; the exhaust is direct over the port coaming to the air.

The De Dietrich Exhibit.

Three very handsome hulls were shown by the de Dietrich company, better known as a builder of automobiles, but looking this year to exploit its engine on the water. The 8-meter racing launch, *Dietrich I.*, by the Société La Marguerite, is a handsomely modeled boat, intended for the 1904 Gordon Bennett engine, but it is possible that the new racing engine of 130 horsepower may be tried in her. *Dietrich II.*, of 12 meters or 50 feet, will carry the 90-horsepower motor; she is of good dimensions and able model, being intended for the Algiers-Toulon race. She has a long, easy bow and a marked tumble home aft. There is a large, high turtle-back forward. The new pleasure boat *Dietrich III.* won the prize in her class in the Salon races.

An interesting exhibit was an auxiliary fishing vessel with 24 horsepower kerosene motor. Many of the launches were fitted with good sprayhoods, and in some the motors were neatly encased in wooden covers with glass on the sides. Very little attention has been paid thus far to absolutely special boat engines, unsuitable for other work, although there seems to be a tendency with a few makers towards this type of motor.

Kiel Auto Boat Program.

Special Correspondence.

Berlin, Feb. 8.—The German Automobile Club, represented by its race committee, has issued the program for the two days' motor boating included in the Kiel week, which always attracts so many American yachting men. The chief regulations for the two dates—June 29 and 30—are the division of the power boats into three classes, racing, pleasure and traffic, and fishing boats, the craft in the last class being only such as are used by fishermen proper in their work.

The first two classes have the following sub-divisions: Racing boats—class 1, boats of 18.01 to 25 meters in length, horsepower unlimited; class 2, boats of 12.01 to 18 meters in length, horsepower unlimited; class 3, boats of 8.01 to 13 meters in length, horsepower unlimited; class 4, boats of 8 meters and less.

Pleasure and Traffic Boats—Class 5, boats with motors of 10.01 horsepower and more; class 6, boats with motors of 10 horsepower and less.

The courses for the races have been decided upon as follows: Thursday, June 29, at 5 p. m., classes 1 and 2, race over a distance of about 76 kilometers in the Kiel and Eckernfoerder Bay; classes 3 and 4, in the Kiel Bay and adjoining stretch of the Baltic, the distance being about 48 kilometers; classes 5 and 7, in the Kiel Fjord over a distance of about 20 kilometers. This last course will be used for all classes in case of a storm.

Friday, June 30, racing commences at midday, when all classes go over the course mapped out from the starting point in the Kiel Bay to the finish at Travemuende, about 120 kilometers. All the starts are flying ones. Prizes will be given in all classes, those in the fishing division consisting of cash. The pilot and machinists on a winning boat in the Kiel-Travemuende race will each receive a silver commemoration medal. The number of the crew is unlimited, but on board of each boat there must be at least one member of the German A. C. or a recognized foreign club, or a member of a German yachting club. The entry fees, which must accompany the entries, are: For boats in class 1, 100 marks; class 2, 80 marks; class 3, 60 marks; class 4, 50 marks; classes 5 and 6, 40 marks each. They must be sent to the German Automobile Club, Berlin, W. G., Germany.

ENGLISH AUTO BOAT CARNIVAL

Special Correspondence.

London, Feb. 10.—An interesting proposal has been made to arrange a ten days' auto boat carnival in the month of July, apropos of the French Channel race. The program of events would be as follows:

July 10 to 13, motor boat reliability trials in Southampton waters; July 14, race from Southampton to Calais, 130 miles; July 15, Calais to Gravesend, arranged by the A. C. of France; July 17, manœuvres and Fete; July 18, race from London to Brighton; July 19, races off the Brighton coast in connection with the speed trials.

American competitors are cordially invited to all events, should the "ten days" be sanctioned.

England's Standard Screw.

The difficulty of cutting a screw with absolute accuracy is so great as to be almost beyond the belief of the non-technical public; and even under the most favorable circumstances and with the most perfect mechanism yet produced there is always sufficient inaccuracy in a screw of any length to be measurable with suitable instruments. The British War Office recognized the necessity for a standard screw which would make possible the cutting of accurate threads, and four years ago appointed a committee of experts to study the question and evolve a solution of the problem. As a result of the labors of this committee a standard screw-cutting lathe has recently been set up at the National Physical Laboratory at Bushy House, London, according to Walter C. Hamm, United States Consul at Hull, England.

The precautions taken in mounting the lathe, to say nothing of the construction of the machine itself, are extraordinary. The lathe is twenty feet in length, and, as may be imagined, is a very different affair from the ordinary screw-cutting lathe. The screw is six feet long, and is of compressed steel. When a new screw is to be cut, the rod is held coaxially with the leading screw, and no gears are employed. Delicately adjusted devices in the lathe automatically correct errors to the ten-thousandth part of an inch. In order to obtain this extreme accuracy, however, the machine must be kept at a uniform temperature, and it is therefore placed on a massive concrete foundation in a special house of its own, and the lathe room is surrounded by a sort of outer shell with glazed roof to admit light. Even the presence of human beings in the room is undesirable, so there is a glass partition from behind which the operation of the machine can be watched without the necessity of frequent intrusion into this extraordinary shop. A motor of 5 horsepower drives direct to the lathe spindle, but is outside of the room.

The exact degree of accuracy to which this wonderful machine will work is to be tested publicly, and the result is being awaited with much interest by technical and scientific men.

If there is anything wrong with the machine, don't start in and adjust everything in sight in the hope of accidentally hitting the nail on the head. Examine carefully to find the cause of the difficulty and do not make any alteration unless you know why you are doing it.

Side Lights on the Cuban Meet.

New Details of the 100-Mile Race and Breaking of Mile Record—How Native Co-operation Contributed Toward Success.

Especially Written for THE AUTOMOBILE.

HAVANA, Feb. 16.—The first annual international road race meeting in Cuba, under the auspices of the International Automobile Racing Association of Cuba, came to a splendid close here yesterday with the American colors, which had trailed in the dust on Sunday, flying triumphantly from the bonnet of O. F. Thomas' 80-horsepower De Dietrich. Henry W. Fletcher, the driver, was a proud man as he returned to the starting point after his great mile of 45 seconds, having beaten the world's straightaway road record made by M. Augiers on the Dourdan course, France, on a Mors in 1902.

Fletcher's first mile was made in 46 4-5 seconds, the driver shutting off the power near the finish as he was afraid of a rather sharp turn about 100 yards from the finish. The turn, however, was easier than he anticipated, as the next trial proved. Upon returning to the start after his record mile he warmly embraced his wife, and did a war dance, much to the amusement of the Cubans who lined the road. This road, by the way, is not more than twenty feet wide in most places, although there is about five feet on each side of very good going but not macadamized.

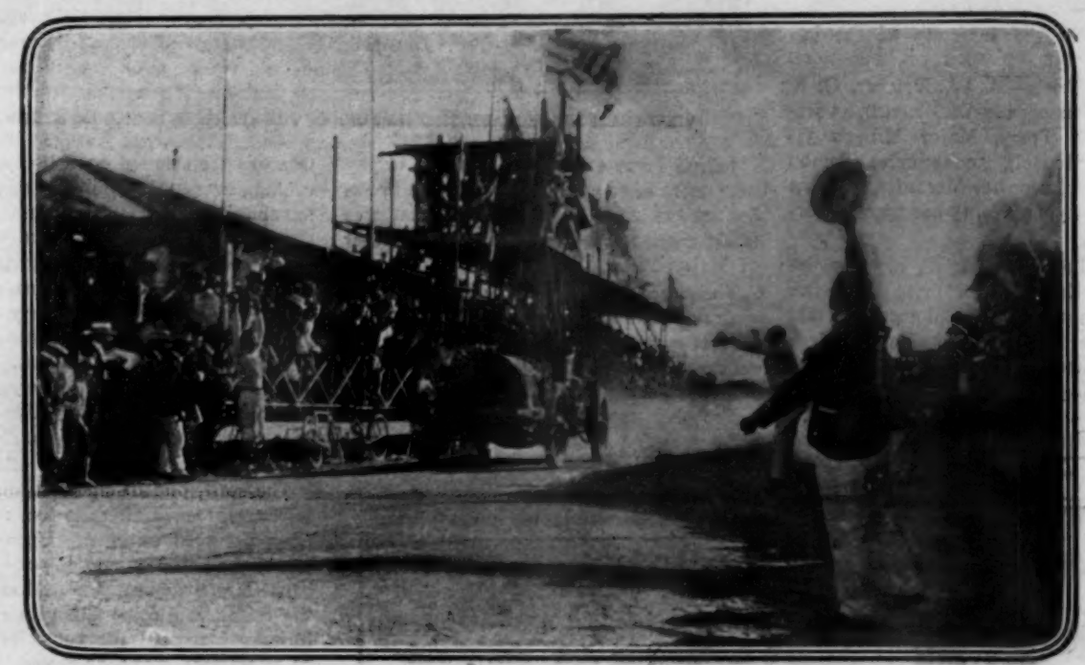
O. F. Thomas, who is the managing partner for E. R. Thomas but no relation, it is understood, has done well in his initial automobile racing venture, and the colors of the Messrs. Thomas will certainly be seen very much in the future. Both are good sportsmen, and the best wishes of the race followers are with them. Fletcher is a humorous fellow, and a hard worker, on and off the machine, and is full of philosophy and good nature. The night before the record trials he worked on his machine until 1:45 in the morning, getting it tuned up, and how much longer is not known, as the writer indulged in four hours' sleep from that time until the bugle called for a 7:30 o'clock start of the races.

There was little competition for Fletcher as Major Miller's Renault was not ready to start when the kilometer events were called, it having been decided, owing to threatening weather, to run the five, ten and twenty kilometer races all in one event, the timers being distributed at the one, five, ten and twenty kilometer points.

E. J. Conill's Mercedes, which won the 100-mile race on Sunday, was not working right; at night the little 12-horsepower Duryea with five passengers aboard towed the big Mercedes with Mr. Conill and two other passengers eight miles towards Havana, it having gone wrong eight miles west of Marianoa.

The Raymon Mendoza machine took part in the races, and so did a 15-horsepower Darracq that covered the mile in 1:22. Mendoza's machine was not timed. Fletcher had a try for the kilometer record of 21 2-5, made by Baras at Ostend, Belgium, November 14, 1904, but his engine missed explosions badly in the trial, and the time was 28 3-5 seconds. Before the mile trial started, Fletcher discovered a piece of waste in the feed pipe and thereafter the machine driven by Gabriel in the Vanderbilt cup race did good work.

The road to Guanajay was lined with people yesterday morning, and many cars made the twenty-five-mile trip from Havana, as the start for the short races was between Guanajay and San Cristobal. The kilometer trials were held between the 49 and 50 kilometer posts. The 20 kilometer race started at the 44 kilometer and finished at the 64 kilometer posts. The road was very fair and level all the way, the drivers having no advantage in grade, and the wind blowing almost straight across the course. The sky was overcast with clouds and a slight shower fell, laying the dust nicely without making the road unsafe.



CARRICABURU WINNING THE 100-MILE RACE IN E. J. CONILL'S MERCEDES AMID INTENSE CUBAN ENTHUSIASM.

The management in this second and concluding day of the tournament was good; the attendance of the public was ignored, as the Cubans wanted the record—and they got it. The mile in forty-five seconds on a narrow strip of road shows that both the road and the machine were good, but it is believed that the time can be beaten on the Cuban road. The times for the kilometer distances established marks up to twenty kilometers for this side of the Atlantic at least, and probably also for the world, as there seems to be no record for that distance, even in France.

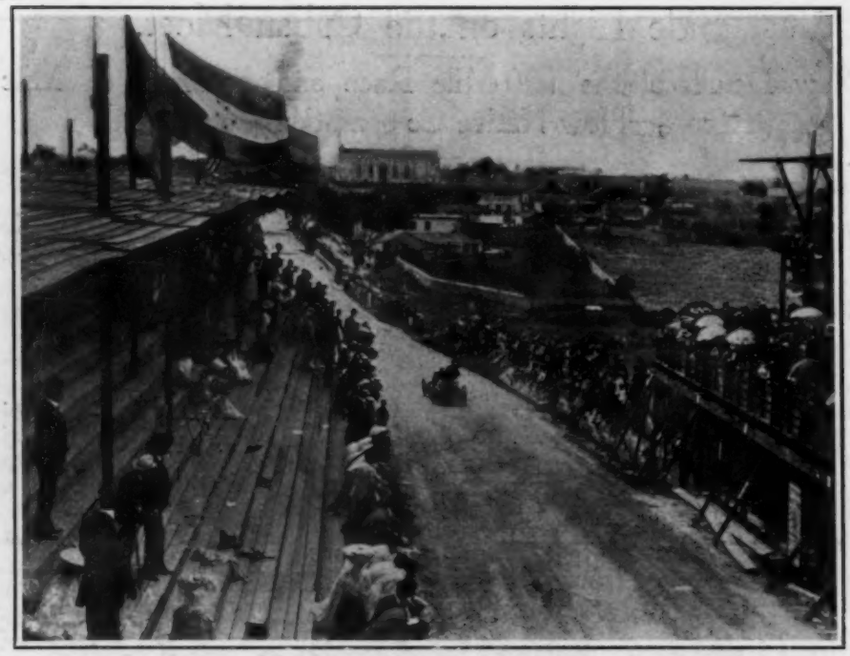
Enrique J. Conill, president of the Cuban Association, worked intelligently and incessantly, as did also Mr. Mendoza, the secretary. These two comprised an entire force in themselves. Mr. Conill is not only a great sportsman but a thorough gentleman, and possesses great tact and consideration.

Visitors will depart on every boat headed north during the next few days, and all will leave with the knowledge that the tournament here will be an annual one of great prominence. With a little better working organization in advance of the tournament everything will go smoothly and the conduct will set a mark for more experienced promoters in the United States and other countries to aim at. The policing of the course on the second day was as thorough and efficient as on the first day. The timekeepers were J. F. Berndes, Joseph J. Emery, E. J. Conill, Charles Earl, John C. Wetmore and W. J. Morgan, while several other watchholders checked the time of the official watches, which were started together by the two chronometers owned by Mr. Conill. The kilometer distances are marked by the government stone posts along the roadside. The mile was surveyed by a government surveyor and checked by several others.

Following is the summary of the last day's races:

One mile Trials—H. W. Fletcher, O. F. Thomas' 80-horsepower De Dietrich, 45 seconds; Joseph Tracy, Major Miller's 35-horsepower Renault, 52 seconds; Ramon Mendoza, 35-horsepower Mercedes, time not taken; Orlando Morales, 15-horsepower Darracq, 1:22.

Twenty Kilometers—H. W. Fletcher, 80-horsepower De Dietrich, first; time, five kilometers, 3:04 1-5; ten kilometers, 5:27; twenty kilometers, 11:18 1-5; Ramon Mendoza, 35-horsepower Mercedes, second; time, ten kilometers, 8:00; twenty kilometers, 21:13. Mr. Mendoza had trouble between the half distance and finish.



VIEW FROM GRANDSTAND, SHOWING ONE OF THE STARTERS IN THE 100-MILE RACE.

Joseph Tracy was ready to try the twenty kilometers after getting his engine in order, but as the officials had left no trial was made, much to his disappointment and that of Major Miller.

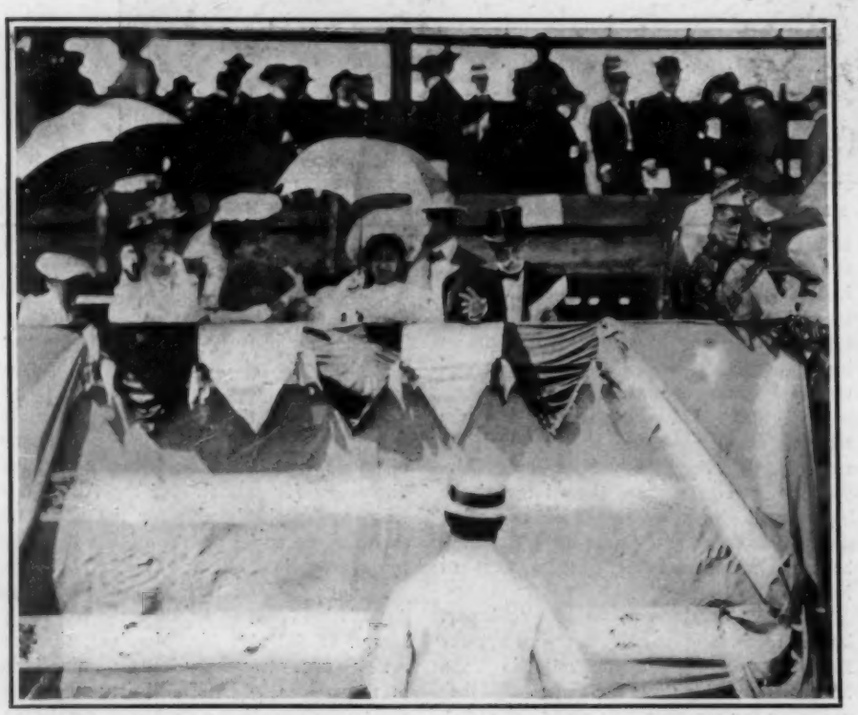
The prizes, which are to be distributed tomorrow, are very handsome.

It is quite possible that a much larger course will be in readiness for the 1906 tournament.

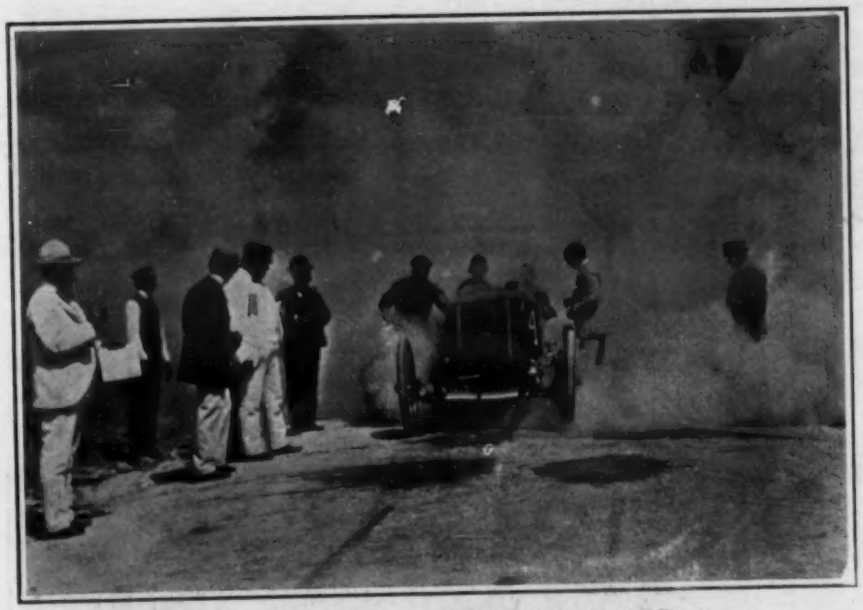
Probably 100,000 persons saw the 100-mile race last Sunday. The crowd was taken to the starting point by special trains running every thirty minutes, and every automobile and carriage was pressed into service. The trolley lines went within two miles of the grandstand and from that point the rest of the journey was made either on foot or in conveyance. A party of officials, including President Conill, had charge of the San Cristobal control, and were the guests of the Western Railway Co., which sent a special parlor car, with a plentitude of refreshments, over the journey of fifty miles.

The start, mid distance and finish points were well looked after, so that not a single hitch occurred at them. Upon arrival at San Cristobal, Manager Lopez, of the Havana Garage Company, Mr. MacNamara, of the Smith & Mabley Company, and W. J. Morgan inspected the control beyond the 92 kilometers' mark, as it was intended to go three-quarters of a kilometer past the last government kilometer stone (92 kilometers from Havana) in order to make up the full distance of 100 miles. It was found that the country road which began at the 92 kilometers' post was dangerous, so a message was telegraphed back asking that the return trip distance be extended in order to make up the 100 miles. Through some oversight of the surveying engineer, there was a shortage of three-quarters of a mile, which would prevent any times standing as record. This unfortunate occurrence was caused through the local association not thoroughly understanding that part of the arrangements and not attending to the matter in time.

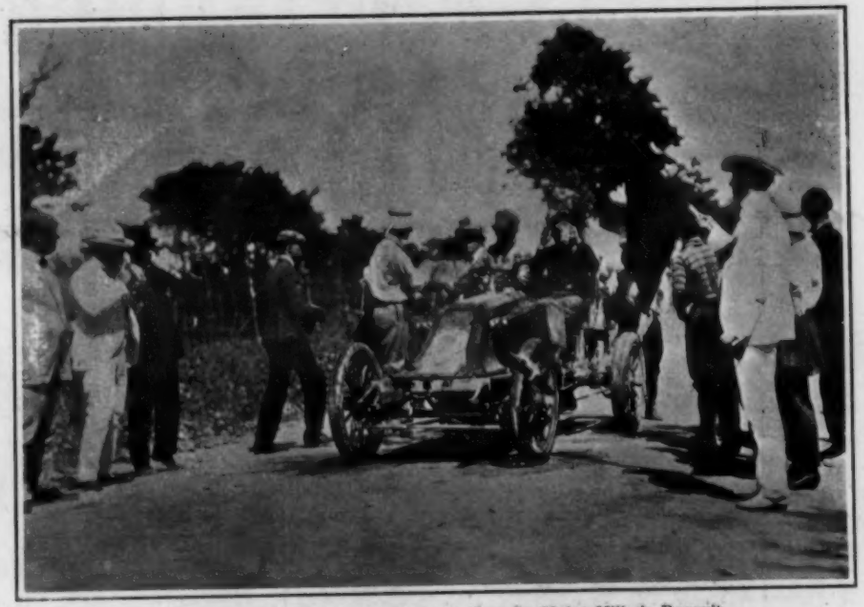
Local owners entered four cars, three of which showed up as starters, one of them, owned by E. J. Conill and driven by Carricaburu, won the race. With E. R. Thomas unfortunately out of the running because



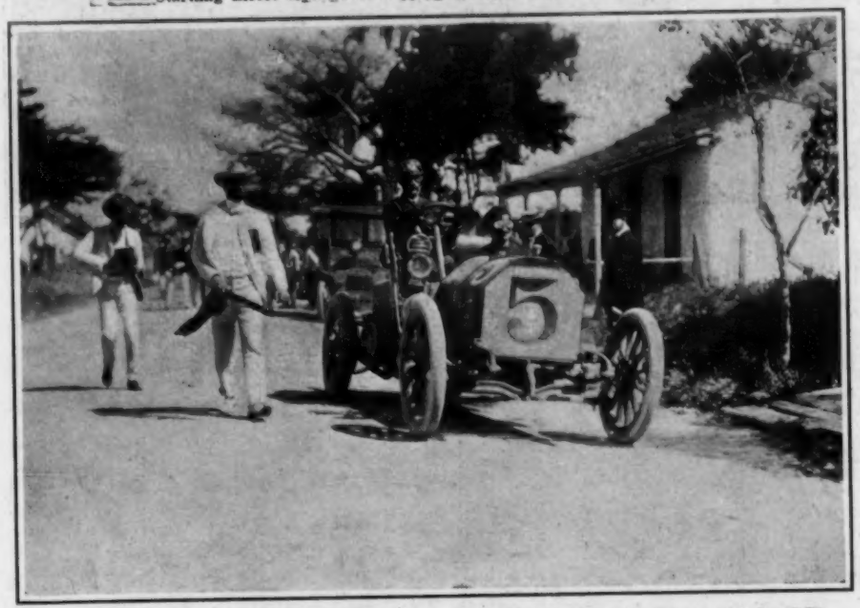
RESIDENT PALMA, OF CUBA, AND HIS FAMILY OCCUPYING SPECIAL BOX IN GRANDSTAND.



Startling Effect of an Over-Supply of Oil in the De Dietrich Racer.



Tracy Preparing to Start in the 100-Mile Race in Major Miller's Renault.



Ernest Carricaburu, Winner of 100-Mile Race, in 40-H.P. Mercedes Owned by E. J. Conill.

President Palma and Cabinet, with Their Families, Watching Floral Parade from Spanish Fort.

PRINCIPAL CONTESTANTS IN THE CUBAN RACE MEET, IN THE CARS THEY DROVE, AND PROMINENT SPECTATORS OF THE FLORAL AUTO PARADE IN HAVANA.

of the accident to himself and Hawley on Saturday, it was thought that the race would go to Fletcher, who, however, finished last, Tracy running second with Major C. J. S. Miller's Paris-Madrid Renault. Fletcher got a puncture on the way out and also had some trouble in starting, so that Tracy, who came through to the half distance with his machine running like clockwork, had eight minutes the best of Fletcher, which meant about nine miles start on the return trip. Fletcher again had trouble going back, his engine getting hot, and some other mishaps occurring. Tracy made a good run back until a few miles from the finish when he commenced to drop his batteries in the road.

Carricaburu drove like a veteran in Conill's 60-horsepower Mercedes touring car and landed first place with both hands in the air as he passed the grandstand shouting his joy, and the Cubans yelled themselves hoarse over the really meritorious performance of the man and machine.

Tracy limped in about two minutes later, having had additional trouble in the breaking of his feed pipe, which was repaired temporarily by the tying of a handkerchief so the engine could get gasoline.

The drivers left the starting point, Renos Arenes, where the grandstand was erected, at ten-minute intervals. Tracy being the first away at 12:10, with a good start. The next away was Fletcher, whose De Dietrich had to be pushed away. At 12:30 the 40-horsepower Mercedes touring car owned by Louis Marx and driven by Joseph Burke, a German, got away, followed by Carricaburu, who shot away with a splendid start. At 12:50 the last machine of the five owned by Ramon Mendoza, a 35-horsepower touring De Dietrich, driven by Robinson, was sent off. The times for the first half of the course were caught at the San Cristobal control, as follows: Tracy, 51:25 3-5; Fletcher, 59:30; Burke, 64:50 1-2; Carricaburu, who had been trailing Burke, arrived almost neck and neck with him in 54:32; Ramon Mendoza, 1:17:01 4-5.

The machines were placed in control and the return trip was started at 2:30 p. m. sharp, Tracy being first off and the rest in the order of their arrival at ten-minute intervals.

The arrivals at Arroyo Arenas, the finish point, were as follows: Carricaburu, 1:50:53 3-5; Tracy, 1:52:26; Burke, 2:34; Robinson, 2:42; and the last to limp in was Fletcher in 3 hours and 20 minutes.

President Palma, who, with his cabinet and members of his family, occupied a box in the grandstand, and expressed himself as delighted with the race and arrangements, told the manager of the government telephone system that the telephone service must be extended all along the coast for next year. This year it extended as far as Guanajay, forty-two kilometers from Havana, but the telegraph service from there to San Cristobal made a connection which worked very well.

E. R. THOMAS TALKING TO FLETCHER.
Note Thomas' Arm in Sling and Bandaged Eye as Result of Accident.

The accident of E. R. Thomas and his driver, Edward Hawley, robbed the meet of much interest, but the collision was the result of their own folly, as they should not have driven at the rate of sixty miles an hour on a public road on which there was heavy vehicle traffic consisting of the slow-moving ox teams, sleepy carriage drivers, and the lumbering *guaguas*, pronounced "wa-wa." Much sympathy was expressed for Mr. Thomas, for he is without doubt a generous sportsman, and a nervy and skillful driver. The comparatively slight damage to himself and to Hawley is due to his nerve and skill. If Hawley had stuck to the machine as Thomas did, both would have fared better, as his weight would have steadied the plunging racer.

The arrangements for policing the course were in every way superior to those of the Vanderbilt Cup race, as the Rural Guards (which means Cuban soldiers), the village police and a small army of bicyclists patrolled the course very efficiently from end to end. These men did their work so well that the President himself would not have been allowed to drive a carriage or be on the course, or go upon it himself on foot. The men had their orders and they obeyed them to the letter. At the half distance—San Cristobal—they would not allow Fletcher to touch his machine, and marched around it with their guns. He could not get to the starting point with it until President Conill released the machine from the guards.

The great drawback, especially to Havana, is the lack of good, well conducted hotels. You are charged first-class rates, which means about $5 American, for very inferior accommodations. It is "up to" the Americans to build a large American hotel here, and to provide better transportation facilities from the States. H. M. Flagler is building his Florida railroad to Key West, using the Florida Keys. He will bridge the Keys from Miami to Key West, a distance of 140 miles, and at Key West it is said he will erect a good hotel for the accommodation of travelers and visitors who will spend the winter months on the numberless delightful islands. From Key West a fast railroad ferry is to run to Havana. It is said that this boat will make twenty miles an hour, that the trains will be run on to the boat and the ninety miles to Havana will be done within five hours instead of the present ten or twelve hours' trip. Then at Havana there will be opened a large Flagler system hotel.

CUBAN RURAL GUARD STARTING TO PATROL A SECTION OF THE COURSE.

Action of Different Kinds of Ignition Sparks.

By RENE M. PETARD.

WHEN studying the action of an electric spark on a combustible mixture, it is noticed that different kinds of sparks do not act in the same way. One can divide, from their particular characteristics, the different kinds of sparks into three different classes:

1.—High tension sparks from induction coils.

2.—High tension sparks from magneto followed by a transformer, either in the armature itself or separated.

3.—Make and break sparks.

Sparks of the first class seem to be slower in igniting mixtures; in fact, in a test made by the writer on an engine in which both of the No. 1 and No. 2 types of sparks could be produced, it was found that at the highest speed attainable by the small engine examined, which was a little more than 3,000 revolutions per minute, the spark advance when using battery spark was exactly double that necessary with the magneto for the same results obtained with the same carbureter conditions and the same length of flame out of the exhaust chamber (exhaust being made direct into the air), while a more complete combustion could be obtained from the charge ignited by the magneto at high speed and with spark fully advanced, this more complete combustion being detected by a shorter and paler flame at the exhaust.

This difference may result from the nature of the spark itself, but it seems more likely to the writer that it can be at least partly accounted for by the presence of the engine trembler and of the coil vibrator, as well as of the transformations which the current undergoes before being in its final form of high tension. The most important of these causes of disturbance is, however, apparently the coil vibrator, the inertia of which has to be overcome to set it in motion at each firing of the charge. The extra spark advance required would not be any inconvenience, if it were not that this system of ignition is not as apt by far as the others to ignite poor mixtures, so that a more perfect carbureter or a more expert driver is required when the maximum of power is to be had out of the engine, or when fuel consumption is an important consideration.

On the other hand, the great advantage of the ordinary jump spark, which is usually blue or purple and of rather feeble section, is to be able to ignite satisfactorily a mixture even in the neighborhood of a metallic wall.

The second class of sparks, produced by a magneto, have besides the advantages mentioned above that of igniting much better a weak mixture at high speed and of giving more efficiency to the engine, a marked difference in the power output of large engines to which it is fitted being noticed, when compared with the ordinary jump spark. The appearance of the sparks in this class varies with the apparatus used to produce them. In the Simms-Bosch type of magneto, which sends a thin secondary high tension spark followed by a heavy flow of primary current, the spark appears like a pale blue core, surrounded by a red flame. In the Eisemann system, which produces a low tension current and sends it in a separate coil to be transformed, the spark is blue or purple and very thin, almost exactly similar to that of a battery and coil system, but stronger. In the Volta type, in which two separate windings, a primary and a secondary, are wound around the magneto armature, it is also blue or purple, but much fatter.

In the two last-named types of magnetos, in which the high tension is produced separately, the low tension circuit is broken when the armature, being between the poles of the magnets, the flow of current is maximum; the sudden break further increases this flow by self-induction and the high tension is produced with more intensity. In the Simms type, the two windings follow each other in series; the secondary current jumps first the points of the plug and allows the primary, which would not pass in ordinary circumstances, to jump the gap.

Sparks of the third kind, which are produced by the sudden break of a primary current between two metallic points inside the cylinder, are produced by an effect of self-induction and present the appearance of a small red flame, sometimes purple. They ignite the largest range of carbureter mixture and require very little spark advance; in fact, they often do not require any to obtain the usual results. Their disadvantage is that they must take place well in the mixture. A spark of this type produced too close to a cylinder wall would give misfires or possibly no ignition whatever, although there may be a very good spark produced.

To explain these results, we may consider that the high tension sparks flow between two points in a gap already occupied by the gas, so that it is the heating of gases by the spark suddenly jumping through them which causes the ignition, in any position, even close to the metal wall. On the contrary, the make-and-break spark flows in a space where no gases are present, so that it is only by outside contact that it ignites; consequently it requires to be surrounded by as much gas as possible on all sides. The make-and-break spark gives the most power out of a given engine, a fact attributed by French experts, among whom is Mr. Brasier, to the particles of metal torn off the contact points by the spark, which particles are then in an incandescent state and diffuse the heat of the spark in the mixture with more rapidity and cause the explosion to be more rapid and fuller.

A USEFUL BOOK.

Under the title "Petrol Motors and Motor Cars," T. Hyler White, A. M. I. M. E., has written a book dealing with the practical engineering of automobiles—a "Handbook for engineers, designers and draughtsmen," as it is described in the sub-title. After explaining the operation of two-cycle and four-cycle gasoline motors, the author plunges into the mathematics of automobile designing, giving formulæ for making the calculations ordinarily required in designing a car throughout, the volume being brought to a conclusion by a number of tables, many of which may conveniently be used in connection with the formulæ given. While much valuable information is given, it is compressed into a small space, there being no unnecessary verbiage.

Besides matter of value to the designer and builder of automobiles, the book contains much information that should be of service to the chauffeur or to the owner who drives and cares for his own car. The author goes at the subject in hand at once, without wasting time in useless preliminary remarks and, what will be still more appreciated by the practical man, without soaring into the realms of pure theory, out of sight of the ordinary mortal. This is doubtless due to the fact that Mr. White is himself a practical man, and knows the requirements of the designer and builder. The book is of convenient size, and is well indexed. It is published by Longmans, Green & Co., New York and London.

The Ruling Passion.

Gabriel, the noted racing automobilist, was describing in New York the joy of speed.

"Whoever," he said, "has once driven a racing car is devoted to racing thereafter. He finds that nothing in the world equals the mad, fierce delight of speeding along firm white roads at the rate of 70 or 80 miles an hour.

"In Paris last year I met a young American millionaire, who had just bought a 65-horsepower car. He and I went out in the country together to try this new car's paces. We had a superb time. The machine was a fine one. We flew so fast we left the birds behind.

"At the day's end we congratulated one another on the sport we had had. It was agreed between us that there was nothing on earth to equal motoring.

"'Can you come out again to-morrow?' I said eagerly. 'Can you come out to-morrow and try my car?'

"'Well,' said the young man slowly, 'I was to be married to-morrow, but—I can put it off.'"—*Philadelphia Bulletin.*

It is a good thing when driving to switch frequently from one set of batteries to the other, say every fifty or sixty miles, thus giving the cells frequent opportunities to recuperate.

Artistic Body Building Methods.

Designing and Finishing in Chicago Carriage Building Factory. Converting Rear Door Tonneau into Side Entrance Body.

Staff Correspondence.

CHICAGO, Feb. 18.—In automobile construction of the ready-made variety there is, perhaps, no one component that is so devoid of personality, so like its neighbor, as the car body. It is, therefore, the more strange in this city, so representative of modern methods of duplication in manufactures, to find an establishment where originality is the keynote, where the workers by hand or machine labor with an artistic patience to produce something that shall be like others of its kind in general design, and yet in details shall be possessed of such individuality that the master workman could single it out were it placed with a thousand of its kind. This is the spirit that seems to pervade a plain, even ugly, brick factory building on Michigan avenue, in the automobile district.

In carriage building Kimball construction has long been recognized in the West as a standard for style and workmanship. This experience is now being turned in the direction of automobile body construction, one of those slow industrial movements that do not partake of the spectacular, and yet which must profoundly affect the industry.

In taking up the work of automobile body building the Kimball interests have been guided by the similar development which has occurred in France. They take the ground that the highest type of machines must not only include the highest engineering skill in the chassis, but sound construction and artistic subtleties of the carriage designer in the body.

Attention to their work attracted by exhibits at the Chicago Show suggested a more critical examination in the workshop on Michigan avenue. It was time well spent, and a narration of some of the methods and results will doubtless interest a wider audience. Though taken unawares, the management showed an artistic liberality in permitting the closest inspection of methods and work.

In this plant each new vehicle is considered apart from all others, a problem unto itself. There are, of course, certain broad limitations to design. First of these is the size of the chassis, and, dependently, the weight of body. Next, the type of body required by the owner, and, lastly, the question of cost, though in most constructions this is left entirely to the judgment of the builders. These fundamentals settled, a preliminary sketch, on a scale usually of 1-2 inch to a foot, is made and discussed by owner and designer.

An agreement reached, the next step is the drawing in chalk of a full-sized profile in the designing room on a blackboard. The blackboard measures about fourteen feet by eight feet, and is one of a set hinged vertically and swinging outward, so that if more than one full-sized drawing is required, immediate comparisons can be made. In the accompanying photograph the blackboard is shown, at a time, luckily for THE AUTOMOBILE photographer, when a tentative design had been completed.

A critical examination of the completed design often extends over a couple of days, for flaws in artistic arrangement or in the practicability of a design are frequently recognized only after repeated inspection.

From the board, the next step in the progress of the accepted model is the laying out of the design on the working "shop" drawings, which are also made actual size. When finished, the drawings are turned over to the shop experts. First of these is the pattern maker, who lays out the work, cutting templets for the various curves and members.

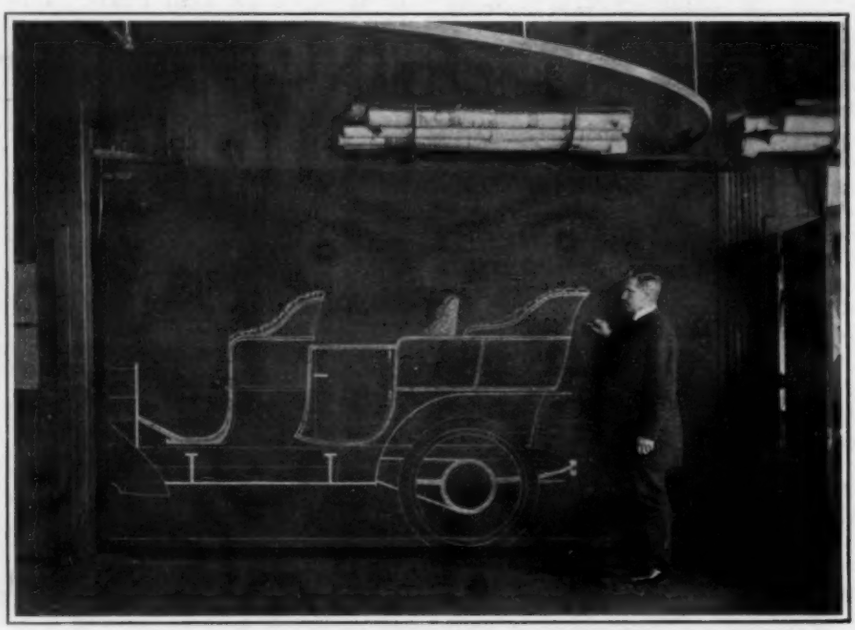
So far the work is formative rather than constructive, this period starting with the selection of the lumber, which is chosen by another expert and passed on to the machine room to be roughed out for the body builders. The latter work in gangs, a master and two or three helpers, who fashion each member into the shape it must take for final assembling. Most of this work is done by hand, and its progress recalls to mind sundry old prints of the mechanic arts in the days when steam was yet in Watts' teakettle. If the truth were known, it is not so much desire as necessity that compels, for where one thing, and one only, is to be made from a design, automatic machinery has a limited application. As well try to make an original Worth gown in a factory for soldiers' clothing as an automobile body with artistic individuality in a planing mill.

With some preliminary painting or filling of the grain of the wood, the assembled body goes successively to the blacksmith's shop, to be "ironed," the trimmer's shop, to be upholstered, and the painting and finishing shops, for repeated coats of paint and varnishes before it finally finds a home in the owner's garage.

In the earlier stages the owner has selected his quality and color of leather and his color of body, and has suggested or accepted ideas in those little permanent attachments in the shape of pockets, boxes and the like that have such a fascination for the fair sex in carriage construction.

It is slow work, for art does not like to be hurried. There are many causes for delay, one of which is the thirty-three separate coats of filling, paint and varnish which have to be applied at different times and with different kinds of skill during the process of construction.

Turning now to actual examples of body building in this shop, it was fortunate that the visit was paid when there were several interesting vehicles in various stages of construction. One which presented several features of interest was a limousine body building for a Chicago automobilist which is photographically reproduced on page 309. This body is built upon brougham lines, and is intended to seat five persons inside and two outside. The front seat is made with a removable middle section, which can be seen in the photograph resting against the front left seat. The back of



BLACKBOARD WITH FULL SIZED OUTLINE OF CAR BODY IN KIMBALL FACTORY.
Note that several boards are hinged to swing out so that if need be different designs can be compared.

this middle section slides up and down in two side grooves, and the movable portion of the front seat is hinged to it, as is also the board which closes the opening below the seat, and which is let down inside the car body. The center glass panel in the front of the body, which is not shown in the photograph, will be hinged so as to fold up against the inside roof. By opening this middle section in the manner described it will be possible to pass out or in to or from the driver's seat without stepping outside the car. And when driving in fine weather, the middle section of the glass body front can be hinged up, so that conversation can be carried on between persons inside and out.

seats will be fitted inside the body. A feature of the construction is that each of the panels is made in one piece. The back panel is made in an outward and inward curve, and is about 52 inches from left to right in its widest part, and about 27 inches from top to bottom. All the panels are made of poplar, technically known as white wood, and the structural members of second-growth ash. The windows in the doors let down, and the two rear windows on each side will be made in removable frames and a substitute blind shutter fitted interchangeably for the window furthest back on each side.

The extreme length of the body from front to back is 9 feet 3 inches, the doors

amined and reproduced in the photograph on page 310 was fitted on an Apperson chassis with a 40-horsepower motor. This is a limousine finished in maroon, with vertical stripes on the body, alternately light and dark. All mouldings on this car are made perfectly plain, as it has been the experience of the builders that fancy mouldings only catch the dust, and being unsuitable for this reason, are therefore inartistic. The inside upholstery is in light brown Bedford cord, with broad-lace finish (this having a silver background) and steel-colored silk window curtains. The driver's seat is finished in maroon-colored leather with a grain like morocco.

The doors open toward the front and

SPECIAL LIMOUSINE BODY IN THE ROUGH, BUILT AFTER SPECIAL DESIGN OF THE OWNER.
Note removable center in front seat allowing passage in and out of body without opening side doors. Back and seat of this section are lying on left front seat.

The extension top is rounded in front and has a cross piece in line with the top of the dash between which the usual glass pane in front of the driver's seat will be carried. The under side of this extension is covered with mahogany, on which are laid cross mouldings of Circassian walnut—an architectural effect in design, made at the especial request of the owner. It will be noticed the body sides are flared considerably—"turn under" sides, in technical parlance—giving a broad seat on a comparatively narrow base; in fact, coach builders claim that the standard width of chassis is about four inches too narrow for proper body proportions. The body seat is, of course, fixed, and two forward folding

are 20 inches wide in the clear, and the head room above the back seat will be more than 40 inches when the body is upholstered. Complete, the body will weigh about 500 pounds. It will not be carried on any regularly built chassis, but will be hung on great C springs on a special chassis made locally in Chicago, which the owner has already had in use fitted with a victoria body. It is his intention, indeed, to have, in addition to the body here described, a hansom cab body and a double phaeton body, all interchangeable, on the same chassis, giving him a selection of vehicles for town and country use in winter and summer.

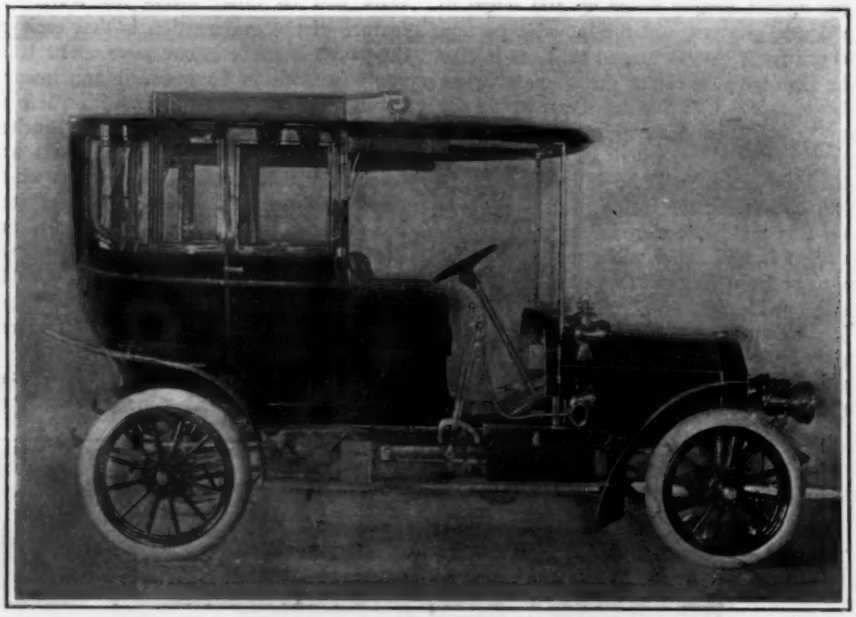
A beautifully finished body also exdisclose two supplementary seats, the inside carrying five persons. Long, broad-lace arm holders on each side are swiveled at the top and hung so that they can be used by persons on the forward seats or the back. Sliding brass ventilators are fitted in the front panel above the glass, giving good ventilation when the car is closed.

A neat little fitting consists of two permanent cabinets placed in the upper corners of the back and opening inside the body. They are very shallow, and one holds a hand mirror and the other a comb and brush. A speaking tube runs from a flexible mouthpiece at the back seat to a little brass megaphone over the driver's

head outside, so that he need not take his hands from the wheel while receiving orders, a great convenience in city driving.

Another fine vehicle on the floor was a Berline body on a 40-horsepower Columbia chassis, built for family use to the order of a Chicago banker. This was certainly a fine example of body building, and in the convenience of its interior arrangements and excellence of appointments was superior to anything of the sort the writer has seen abroad in an extensive investigation of foreign built cars. It gave one an immediate impression of good taste and comfort, with elegance, in the true meaning of that much-abused word, that one would hardly expect to find, by chance, at any rate, in Western design. The body was finished in dark green and upholstered inside in genuine morocco leather of a deep rich green, the driver's seat in the same color of water-grained leather.

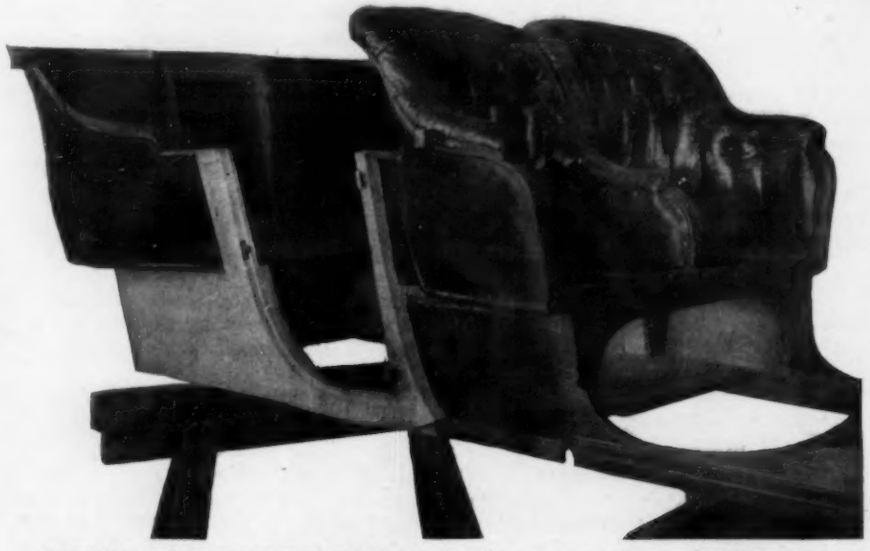
The seating capacity is six inside and two in front. A beautiful sweep in each side gives seating room for three persons on the back seat without the least crowding. In front of this, at the sides, two individual seats with easy backs are arranged to collapse, and by a circular movement to fold out of the way close to the sides. Another individual seat folds down from the front, between the two side seats, and there is no clumsy or trappy effect. As the wheelbase of the chassis is 120 inches, there was an abundance of fore and aft room, and the side doors are of large size, permitting easy entrance. From the top of the rear-seat cushion to the ceiling the head room is 41 inches, so that a man who had not an abnormally long body could sit in comfort with a top hat on. Electric lights illuminate the interior on pushing a button, and a driver's megaphone is fitted. Almost every builder's catalogue tells of "well upholstered" seats, and if the term applies to the average, some new superlative is needed to describe the cushioning in this fine car.



KIMBALL LIMOUSINE WOOD BODY ON 40-H.P. APPERSON CHASSIS.

A very fine quality French plate is used for the windows, and all are plain, not beveled, the builder's explanation being that beveled glass gives false vision around the edges, and is highly undesirable in an automobile body.

The one exception to the creation of artistic productions which was noted in this plant, and which was of a purely utilitarian character, was the conversion of a rear-entrance tonneau body into a modern side-entrance body. It was an aluminum body, originally fitted to a Peerless chassis, and which, having given the owner satisfactory service, he decided to have remodeled to meet the present fashion. Yet, while the possibilities of the artistic design were narrowed by the character of the undertaking, there was a thoroughness in the work that was very interesting. The stage at which the operation was found is permanently recorded in the photograph on this page, which gives the reader a much better idea of the change effected than any picture of the completed body could possibly do. The white portions show the new work, which is of wood, and the darker the portions of the old body retained. All body work turned out in this shop, it may be said in passing, is of wood, no aluminum bodies of any sort being built here.



ALUMINUM REAR ENTRANCE TONNEAU BEING CONVERTED INTO SIDE ENTRANCE BODY.
Note—New woodwork shows in white; old portions original dark red.

In making the change it was necessary to increase the length of the body so the side frames of the chassis were lengthened 11 1-2 inches. This was accomplished by making new hangers for the rear ends of the back springs, the forging being carried forward a considerable length and "spliced" to the frame on each side. The aluminum body was cut through vertically at each side back of the front seat, and a portion of each side removed. The rear panels were removed altogether and wood substituted, and the sill was spliced and lengthened. A new coupé pillar was built up in the front end of each side opening to carry the door hinges, the new doors opening toward the front. Door frames were also fitted on each side, with a handsome sweep following the general curved lines of the old body, and in front and back of these frames the aluminum sides were let in and tightly clamped in place.

The new side doors are 20 inches wide in the clear and 23 inches deep, and are rabbeted in place so that air will not blow through between the doors and frames. The old rear entrance was only 15 inches wide. This was filled up with a wood frame and panel, and the top moulding carried all around. Double panels will be fitted to each of the new side doors, the inner panels giving a strong and lasting foundation for

the upholstery. To hide the joint on the outside, where the rear door is filled, an aluminum moulding is worked on the back, and does not look patchy.

More comfortable seating capacity inside the body is secured not only by making the seat extend across the back, but by making the new seat two inches deeper, or about 20 inches in all. Additional storage space is also obtained by the new seating arrangement, and it is the intention to arrange boxes and drawers in the space under the seat, the minimum measurements of which, in several directions, are 35 inches wide, 17 inches deep and 10 inches high.

In the old arrangement it was necessary to lift off the divided front seat to remove the tank underneath. To save this trouble, and also to prevent any disturbance of the rigidity of the door hinge carrying pillars, the front seats are fixed and the front board beneath is to be made removable, so that the tank can be put in or taken out from the front.

Asked what the usual cost of conversion of a rear-entrance body to a side-entrance body amounted to, the builders said the price ranged anywhere from $250 to $500, depending upon the character of the original construction and the amount of new work to be done.

For courteous permission to inspect the shops and work, to take photographs, and for information, we acknowledge our indebtedness to Mr. C. P. Kimball and to Mr. D. G. McDiarmid, superintendent.

NOVEL CANADIAN SCHEME.

To Induce Immigration from England by Traveling Exhibition.

Special Correspondence.

TORONTO, CAN., Feb. 20.—A motor car has been constructed for the Department of the Interior of the Dominion Government to tour rural Britain and exhibit specimens of Canadian natural resources for the purpose of inducing immigration to this country. It will shortly be shipped to the old country.

E. M. Trowern, secretary of the Retail Merchants' Association, of Toronto, has just returned from a trip to Cleveland and Detroit for the purpose of inspecting the motor delivery wagon and truck systems in those cities. His report is favorable to the adoption of the electric motor system for delivering parcels and heavy freight.

Riding on one of the motor drays in Cleveland, he says, he went four and a half miles in twenty minutes. A motor truck, he found, could run along the streets with four or five tons of freight at the rate of eight miles an hour, and that the cost of operating such a motor would be about $1 an hour. Briefly, the introduction of the motor deliveries in Toronto would do away with thousands of horses now employed for commercial purposes.

His report will be presented at a meeting of the association, which comprises a majority of the retail merchants of the city, with branches throughout the Province.

LONDON'S ROW BURNED.

Hundreds of Cars Shown at the Recent Olympia Show Destroyed.

Dispatches from London dated February 22, report a disastrous fire in Long Acre, the retail center for automobiles and carriages in the English capital. Hundreds of automobiles that had just been removed from the automobile exhibition in the Olympia, under the management of the Society of Motor Manufacturers and Traders, were burned, the total damage resulting from the fire being estimated at $1,250,000. There were many exciting escapes of tenants who occupied apartments above the garages and warehouses.

RUN CUP RACE ALONE.

French Club Decides to Hold Grand Prix Two Weeks Later.

The Automobile Club of France has abandoned the idea of holding the Gordon Bennett cup race in conjunction with the newly planned Grand Prix, according to cablegrams received Monday, and the tempest stirred up by the proposal is subsiding. A meeting was held Monday between the race committee of the French club and representatives of the automobile clubs of England, Germany, Austria, Switzerland, Belgium, Italy and the United States, and the French automobilists were persuaded that their position was untenable. It was, therefore, decided that a fortnight should intervene between the two events, which are to be kept entirely separate. The Gordon Bennett race will be run as in the past, all the participating clubs sharing in the expenses. As Clarence Gray Dinsmore, the foreign representative of the Automobile Club of America, was unable to attend the meeting, the American club was represented by Count Sierstopff, who was also the representative of the German club.

Why French View Changed.

Special Correspondence.

PARIS, Feb. 10.—The English club has offered the most serious opposition to the proposal of the French club to run the Gordon Bennett and the Grand Prix races together on the same course and day, the latest decision being that a committee shall be immediately formed to meet with all other clubs, except the French club, in order to come to some decision regarding the Grand Prix. The British club proposes that if the French club persists in running the two races together all the foreign automobile clubs shall abstain from taking any part in the contests.

The meeting of the committee of the German automobile club this week, at which representatives from Switzerland, Austria and Italy were present, and at which America was represented by Count Sierstorpff, delegated by Clarence Gray Dinsmore, does not appear to have been at all favorably inclined towards the French proposals. With the exception of the Italian delegate, the director of the Fiat firm, which has always announced its intention of competing, all the delegates were strongly opposed to the French plan. A conference of the different nations interested in this important event is to be held in Paris, probably during the next fortnight, and doubtless some working agreement will be reached.

The lively opposition aroused on all sides has had a marked influence on public opinion here. A few weeks ago the objections of the foreign clubs were treated with but little serious attention, and the possibility of a mistake having been made was scoffed at. Now, however, there is a much more conciliatory spirit and quite a number of prominent automobilists are in favor of concessions. The sporting committee met yesterday, but owing to the absence of the president, René de Knyff, who is in America, no decisions were arrived at, the members merely talking over the matter among themselves.

Naturally, many proposals are abroad, one being that the Grand Prix should be run with the French eliminatories; another that it should be run on the day following the Gordon Bennett race. Owing to the extra expense which would be incurred, no one is in favor of three distinct meetings, nor are there many who stoutly maintain that the French club should continue on the lines it has already laid down.

It is now almost certain that permission to run the race on the Auvergnat circuit will be granted, M. Etienne, Minister of the Interior, having declared that personally he is favorable to the course. In order to relieve the minister from personal responsibility, Parliament may be asked to vote on the matter, but there is no doubt as to the ultimate result.

NEW ITALIAN ORGANIZATION.

The Turin Automobile Club is no longer to be regarded as Italy's representative organization in all matters pertaining to motoring, as at a meeting of leading automobilists delegated by all the Italian clubs held recently at Turin, it was resolved to found an Automobile Club of Italy. This new body has its headquarters at Turin and its executive officers are Marchese Geriori, president; Cavaliere Massoni and Marchese Ferrero as vice-presidents, with Conte Viglietti as secretary.

An automobile show, the tenth of a series promoted by the *Motor Car Journal*, of London, England, will be held at Agricultural Hall, London, commencing March 18 and closing March 25. It is anticipated that a number of American cars will be shown, as well as machines of Continental construction. The Aero Club of Great Britain is preparing an exhibit of balloons, air-ships and the various appliances for aerial navigation.

Premier Air-Cooled Car.

Certain features of construction of the Premier air-cooled motor car, depicted in the photographs herewith, are of interest as showing how its builders have managed to carry the general form of design—with transverse front engine and no fan—into higher power than have before been attempted.

The speed-changing mechanism—a Ball planetary gear, giving the customary two speeds and reverse—is located under the body instead of on the engine shaft. It is carried in a sort of pan of cast iron, which protects it from dust rising from below. A sprocket chain connects it with the engine, and another, from the other end of the planetary shaft, with the axle. The advantages claimed for this arrangement are that it permits the use of a larger and more durable planetary gear, and that, by the use of two chain reductions, the need for a very small sprocket pinion and all "whipping" of the chain are prevented.

The engine is movable forward by set screws on its false-frame support to lighten its chain, and the rear chain is tightened by distance rods as usual.

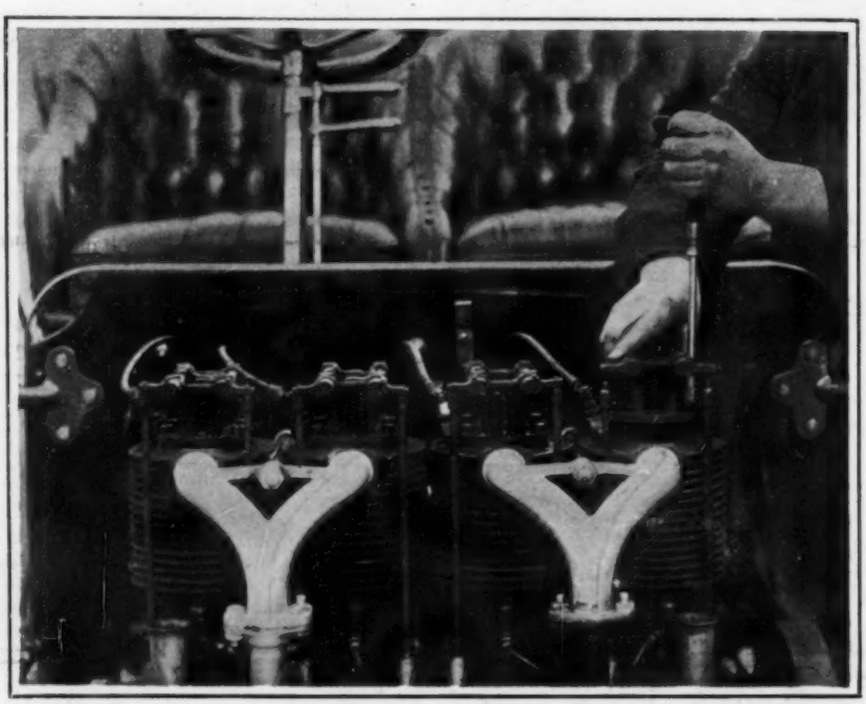
The cylinders are of the approved air-cooled type, with valves opening directly into the head, and are 3 3-4 inch bore by 4 1-4 inch stroke. The compression is low—only 40 pounds—this being essential to keep the maximum temperature within bounds. Both valves are opened mechanically, and their location in removable cages makes access to them very easy. For the best cooling effect, the exhaust valves discharge into pipes at the front of the motor.

Oil is fed to the four cylinders separately by a McCanna oiler, and the case is oiled by splash, three transverse ribs rising each to the normal oil level, preventing the oil from flooding either end at the expense of the other. The main shaft bearings have large pockets to catch the oil.

The planetary gear has a metal to metal cone clutch for the high speed, and is mounted on "American" roller bearings. All gears are hardened steel, bronze bushed and mounted on hardened steel studs. No internal gears are used.

Full elliptic springs are used at front and rear. The rear axle is trussed, and has roller bearings. According to the style of body used, the wheelbase is from 82 to 96 inches—the former for the runabout, the latter for the side entrance car. The wheels are 30 to 32 inches, according to the load, and 3 1-2 inch G & J tires are fitted.

PREMIER FOUR-CYLINDER AIR-COOLED TOURING CAR, WITH SIDE ENTRANCE.



FRONT OF PREMIER CAR, SHOWING SIAMESE EXHAUST PIPES AND VALVE ARRANGEMENT.

Motor Volunteers in Italy.

In line with similar work in England and France the war office of the Italian Government recently made a test of automobiles and their volunteer owners, the details being given as follows by U. S. Consul Harlan W. Brush, of Milan:

"An interesting and successful trial of automobiles under the auspices of the minister of war was held this month, in which it has been demonstrated to the entire satisfaction of those concerned that automobiles can be used to advantage in war times. As horses owned by private persons are subject to requisition by the military authorities in the event of war, an attempt will be made to render automobiles subject to the same law.

"Fifty owners of automobiles were invited to take part in the manœuvres, and of these thirty responded. Thirteen routes were selected, leading to various points on the eastern, western, and northern frontiers. All covered a considerable length, and many were difficult. One led to the fortress of the Spluga, lying at an altitude of 2,107 meters (6,909 feet) above sea level, and another to the Stelvio, at a height of 2,756 meters (9,042 feet), which is the highest carriage road in Europe.

"At dawn each chauffeur of the thirty automobiles participating left the town of Brescia by a certain gate, and then opened a sealed order containing the route laid down for him. In view of the supposed invasion of the country by an enemy, the routes were selected with regard to safety as well as speed. The distance had to be covered within twenty-four hours, and the military authorities made every preparation for verify-

ing the routes, time of departure and arrival, etc. Copious notes, also, were taken in order to suggest improved methods in future trials. Some of the cars carried officers.

"Every one of the cars returned to Brescia before midnight of the same day, and but one of them had an accident. Two cannon were transported by the automobiles, and bread and other supplies were taken to fictitious military camps. In rapid delivery of important supplies, such as heliographs, field telephones, etc., and for many other strategical purposes, it was found that the new service went beyond all expectations. The longest distance covered was 540 kilometers (335 miles)."

Motor Cars in Sweden.

Motor cars have been in use here only about three or four years, writes United States Consul R. S. S. Bergh, from Gattenberg, Sweden. The first two or three were small runabouts, of French manufacture. Later some larger cars have been brought—"open daraqs," resembling surreys or light touring cars. There are now, in all, fourteen motor cars in this city, of different types, and of French, Swedish, German and American manufacture. There are also some motorcycles of German make, or put up here with German motors. I understand that all of the motor cars were bought direct from the manufacturers. Some cars set up and with the tires on have been purchased abroad and brought home by the purchasers.

The roads in this country are fairly good, but cannot be considered ideal for automobile travel. They are, as a rule, rather narrow and sloping too much from the middle toward the sides, not to mention steep hills in certain places. The motor cars are mostly used within the city limits, and only occasionally on longer tours. In the southern part of the country the roads may be better, however.

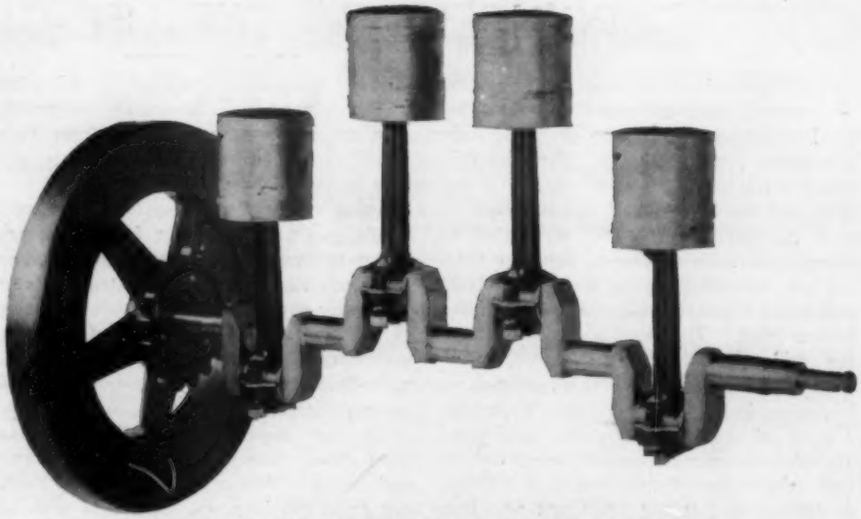
From an American point of view there are here comparatively few persons rich enough to buy first-class motor cars, regardless of cost. The price will always be an important factor.

The import duty on complete motor cars is 15 per cent *ad valorem*, costs, insurance and freight entering into the dutiable value. The duty on gasoline motors is 10 per cent *ad valorem*, and on electric apparatus 15 per cent.

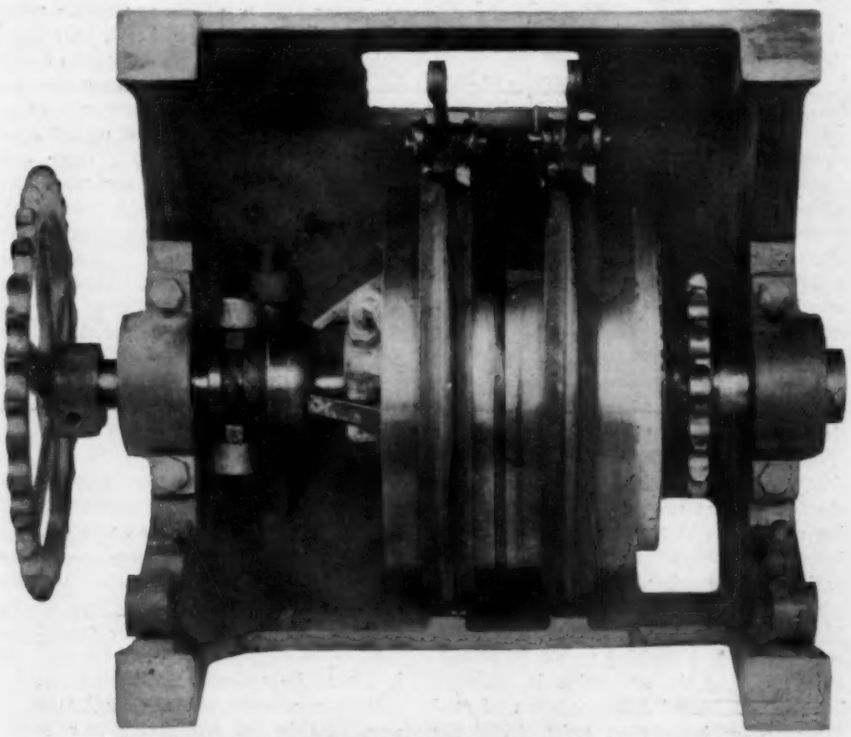
The price of gasoline (specific gravity 0.675 to 0.680) is 35 kroner per 100 kilos ($9.28 per 220.46 pounds). The price of benzine (specific gravity 0.685 to 0.690) is 32 kroner per 100 kilos ($8.58 per 220.46 pounds); in smaller quantities, 50 to 75 cents more per 220 pounds. When bought in small quantities from the retail stores, benzine costs about 16 cents per quart. Private persons are not allowed to have gasoline or benzine in larger quantities, respectively, than about eight quarts in cities, and about twenty-seven quarts in rural districts. By special permission, larger quantities may be kept.

As far as motor car traffic is concerned, Sweden is a field not yet developed, and the American manufacturers ought to have about the same chances to sell as those of France or Germany. An obstacle, however, is that the United States is more distant, causing higher transportation costs and longer time in delivery, and European manufacturers can send representatives here easier and cheaper. Motor cars, including heavy motor trucks, are also made in Sweden, but on a small scale.

Private persons here have stated to me that they will not buy before motor cars have been invented which are noiseless and odorless, but they might change their opinions if they were given the opportunity of trying a good American motor car, selling at a reasonable price.



CRANKSHAFT, PISTONS AND FLYWHEEL OF THE PREMIER CAR.



PREMIER PLANETARY TRANSMISSION, SHOWING SPROCKETS FOR ENGINE AND DIFFERENTIAL CHAINS.

The piston speed of the average gasoline motor, that is the distance the piston would travel if it moved in one direction continuously instead of reciprocating, is about 700 feet a minute.

"Where is that wild citizen who used to be so reckless?" asked the cactus collector in Eagle Eye. "Is he still out here?"

"No," responded Amber Pete; "it got to be too tame out here. He's gone East to be a chauffeur."—*Chicago News.*

POINTERS ON THE USE OF DRILLS.

THE removal of the stub of a stud or bolt broken off short in the hole, leaving nothing to get hold of, is not such a hopeless job as it looks. Put a center-punch mark or "center-pop" exactly in the center of the broken bolt and drill a hole clear through it with a drill one-eighth to one-quarter inch smaller in diameter than the bolt, according to the size of the bolt, and drill straight, leaving a thin shell of the broken stud. The heat and vibration of the drilling frequently has the effect of loosening the stud, which is, of course, an advantage in the final operation. Then take a piece of square steel measuring diagonally, from corner to corner, one-sixteenth inch larger than the drilled hole. Taper it slightly so that the small end will just enter the hole, taking care that the corners are straight and sharp. Drive it lightly into the shell of the broken stud, just enough to make it grip, and with a wrench unscrew the shell. If it is found that the steel drift revolves without turning the stud, drive it a trifle harder; but remember that if driven too hard it will simply expand the shell and make it all the more difficult to remove.

* * *

A good way to loosen a stud that promises to be difficult to start is to heat to a bright red a piece of iron that will just enter the hole drilled and leave it there until it cools to almost black. Then, with a squirt-can or in any other convenient way, apply cold water to the shell and immediately drive in your drift and apply the wrench. The purpose is to loosen up the rust by the alternate and unequal expansion and contraction of the stud and the surrounding metal.

* * *

If all such efforts to dislodge the stump prove ineffectual, there is a last resort that seldom fails, but which should not be attempted except in case of necessity. With a narrow cape chisel, or triangular file, cut a groove the full length of the hole drilled in the stub, cutting the groove just to the bottom of the thread. This will cut the shell so that the cape chisel, applied at the top near the groove, will close it into the hole, loosening it so that it will easily come out.

* * *

To place a hole with extreme accuracy, make the center-pop with a sharp-pointed punch, called a "prick-punch," and describe a circle with your dividers just a trifle larger in diameter than the hole is to be. If the hole is to be small, a plainly marked circle will be sufficient, but if the hole is over 1-4 inch make four center-pops with the prick-punch exactly on the circle at approximately equal distances apart. Start the drill, and before it has cut in far enough to bury the beveled part, stop drilling and examine the work. If the edge of the started hole is exactly concentric with the circle, or equi-distant from each of the center-pops made on the circle, the hole is started true. If, however, the preliminary cut is off center, make a center-pop in the hole a trifle further from the exact center of the drill point than the distance by which the hole is out of true. Make the center-pop quite deep, so that the point of the drill will be drawn out of its original course enough to true the hole. Drill a trifle deeper and again examine the cut, if necessary repeating the operation. A little preliminary experimenting will make this quite clear. The process is called "drawing" a hole. When large drills are used, say from 5-8 inch up, instead of making a center-pop, a groove is cut down the side of the cut with a round-nosed chisel, as a center-pop would not be sufficient to draw so large a drill.

* * *

When drilling steel or wrought iron, the drill should be kept well oiled or it will soon overheat and lose its temper, and, besides, will cut less freely. Cast iron and brass, however, must be drilled dry, and for the latter the speed of the drill should be as high as possible for small holes.

* * *

Grind twist and fluted drills so that the cutting edge is left projecting a little. If this is not done the drill will simply glide around on a beveled end, taking at most only a very slight scrape instead of a full cut. If a drill seems sharp but refuses to cut it will generally be found that the trouble is lack of "backing off," as it is called. When grinding be careful to keep the point exactly in the center of the drill, for any little variation in its position will cause the hole drilled to be larger than the diameter of the drill. In fact, it is a common practice, where a hole of slightly larger size than the drill is wanted, to grind the tool a little off of center. This is a makeshift, of course, and is to be recommended only when there is no other way out of the difficulty.

* * *

A drill for enlarging a hole already drilled should have a small flat ground on the lip just behind the cutting edge. For ordinary drilling this would reduce the depth of cut and make the drill work very slowly and heat up quickly; but in enlarging a hole the drill has not the steadying influence of the point to guide it, and, as ordinarily ground, would, as soon as it touched the metal, dig in viciously and stick. If the driving power were greater than the resisting force something would, of course, give way, and the something is likely to be the drill. Fluted drills are better adapted to enlarging holes than twist drills, the latter having more tendency to draw in than the former. Never trust to a drill for enlarging if you want the hole to be smooth and true, for the drill, having no support from the center, will "wabble" and make the hole irregular. A little caliper work on an enlarged hole will show this very readily. If there is no reamer at hand to ream a hole to the desired size, the hole can be plugged, the plug center-popped and a new hole of the correct diameter drilled through the plug.

* * *

To drill a hole in any metal that is too hard to be touched by a drill of ordinary hardness, try hardening the drill outright and using it without tempering. Care will be necessary in using the drill, as the extreme brittleness of dead hard steel will make it snap almost like glass. If quenching in water does not impart sufficient hardness, try hardening in mercury or strong brine. Drilling very hard metal with a glass-like tool is, however, a very unsatisfactory business, and should be avoided if possible. The proper hardening of tools is an important matter, and though long experience is necessary for the production of the best results, ordinary tempering may be done by the amateur with a little practice. Take a flat drill, for instance. Heat the drill to a bright red for about half an inch from the point and dip it vertically into the water, point first, completely submerging it. Do this quickly and then bring it up so that only the cutting edge and a little more of the drill remain in the water, and hold it there for a few seconds. Take it out of the water, and, as quickly as possible, polish off one side of the point, brush your finger quickly over it and watch the colors appear on the clean place. If you want the drill very hard, wait until the cutting edge assumes a light straw color, and plunge it entirely under water, holding it there until it is comparatively cool. A dark blue color will give a cutting edge too soft for ordinary work, and between these two colors can be found any desired temper. This method will leave the shank of the drill soft, so that it will not snap under strain, as it would if it were made as hard as the edge. Another way to bring the drill to the correct temper is to harden it outright at once, and then re-heat it until the proper colors appear; but this is not usually as satisfactory as the first method, which is the one generally used in shop practice. The point is hardened outright and the shank left soft and so hot that it transmits enough heat to the point to reduce the hardness to the proper degree If the shank is too hot the colors will flash along the point so quickly that the proper one cannot be caught and the line between the hard and the soft part is apt to be too sharply defined. If too cold, there will not be heat enough to do the work, and the drill will have to be re-heated to temper it.

AMERICAN AND FOREIGN AUTOMOBILE AND AUTO-BOAT FIXTURES.

Feb. 21–March 9.—National Motor Boat Show, Madison Square Garden, New York. Nat. Assn. Engine and Boat Mfrs.
Feb. 18–25.—Cleveland Automobile Show. Cleveland Automobile Club.
Feb. 24–March 4.—Edinburgh Automobile Show.
Feb 24.—Manchester Automobile Show opens
March 3–11.—Motor Show, Liverpool, England.
March 6–11.—Third Annual Buffalo Automobile Show, Convention Hall, Buffalo. Buffalo Automobile Club.
March 11–18.—Third Annual Automobile Show, Boston. Boston Automobile Dealers' Assn.
March 13–18.—Importers' Automobile Salon, Symphony Hall, Boston.
March 18–25.—Cordingley's Tenth Annual Motor Car Exhibition, Agricultural Hall, London, England.
March 27–April 5.—Fifth Annual Washington Automobile Show. Washington Auto. Dealers' Assn.
April 1.—Light Van Trials. A. C. of Great Britain.
April 2–16.—Monaco Motor Boat Fortnight.
April 10–15.—Denver Automobile Show, Coliseum Hall.
May 11–25.—Stockholm Automobile Show.
June 26.—Mont Cenis Hill Climb
June 29–30.—Auto Boat Races, Kiel, Germany; German Automobile Club.
July 10–20.—English Auto Boat Carnival, English Channel and Thames River. A. C. G. B. & I.

PRICES IN AMERICAN DOLLARS OF LEADING MAKES OF CHASSIS (WITHOUT BODY) ON THE CONTINENT.

(To ascertain the approximate cost of any foreign chassis laid down in the United States, add 45 per cent *ad valorem* for duty and also probable freight charges. The cost of body will be from $200 to $2,000, according to size and style.)

Car. Horsepower—	6	7	8	10	12	14	15	16	18	20	22	24	25	28	30	35	40	50	60	70
Ader			1.300	1.500	1.900				3.200					4.400						
Argyll (English)				1.900				2.750		3.500										
Aries					1.380		2.180				2.800				3.400					
Automoto								2.800									4.400			
Bailleau	540		670	1.060	1.400															
Benz (German)								3.000	3.600			4.800				6.000				
Berlet						2.500					3.000						4.000		6.000	
Bolide			780	980					1.580					1.980						
Léon Bollée										4.000							6.400			
Brouhot				1.440	1.800		2.000	2.300		2.600		3.000					5.000			
Léon Buat			1.040	1.240	1.310	1.360		1.760		2.100				2.560						
C. G. V									3.000				4.400				6.600		8.800	
Chaboche					1.900					2.300					2.800					
Chenard-Walcker						1.300			1.540											
Clément-Bayard		1.160	1.300	1.500	2.200			2.600				3.300				4.000				
Cottereau			620	1.360			1.840			2.800										
Créanche				840	1.200		2.000			2.200					2.400					
Cudell (German)				1.560						2.700							4.000			
Darracq			900		1.490		2.040		2.800	2.600				3.000	3.400					
Decauville						1.500		1.960		2.500		3.100			3.500		4.500			
Delahaye			1.360		2.820			2.740					3.140							
Delaugere			1.120		2.000			2.300				3.000								5.600
Delaunay-Belleville								3.000				4.000					5.200			
Diétrich								3.000				3.900					5.000		6.000	
de Dion-Bouton	790		1.050	1.300	1.700		2.500													
Direct (Belgian)															3.000			3.000		
La Fauvette	654		536	1.166	1.763			1.805												
Fiat (Italian)								2.980				3.600								
Fouillaron (with body)	850		1.050	1.500	1.800			2.600		3.200		3.800								
Gardner-Serpollet (steam)				1.300			2.900										5.000		6.000	
Georges Ville							2.700		3.000						3.600					
Germain Standard (Belgian)								2.300				2.800				4.800				
Gillet-Forrest			1.400		1.700			2.500				3.200			4.200					
Gladiator				1.320	2.000			2.300				3.000								
Gobron-Brillié													4.400			5.000			7.000	
Grégoire	690								2.500											
Henriod			620		1.200					1.840		1.960			2.400					
Hotchkiss									3.200						6.000					
Hurtu			830	1.300				2.300												
Isotta Fraschini (Italian)					2.400			3.000				3.600					5.000			
Prosper Lambert				720	930			1.800				1.600								
La Magnétic					1 640				2.240											
Martini (Swiss)									2.000						4.000					
Mercédes (German)														3.000			6.000			9.000
Minerve					1.480				1.760			2.000								
Mors					2.300	2.800				3.700		4.200					5.600			
Motobloc				1.480				2.100												
N. A. G. (German)				1.640						3.200										
Oldsmobile (American)		800																		
Panhard-Levassor		1.360	1.800	2.300			3.000		3.600			4.600				6.000		7.400	9.000	
Peugeot	790			1.400	2.100				3.000						4.300					
Pipe (Belgian)						2.000			3.000							4.400				
Pope (American with body)										3.300					4.100		6.700	12.000		
Radia				2.000			3.000						3.600			5.000				
Renault Bros			1.080	1.560		2.300			3.300											
Richard-Brasier			1.400		2.400			2.800				3.800					6.000			
Rochet-Schneider												3.200				4.400				
Rolls (English)				1.460			2.000			2.760					4.140					
Spyker (Holland)								2.500		2.800						4.400				
Tony Huber			1.130	1.230				2.500				3.800								
Turgan								1.440												
Vinot-Deguingnad				1.600		1.900				3.000					4.000					
Westinghouse										4.600										
Wolseley (English)	1.020		1.360		2.100															

Correspondence

A Commercial Traveler's Experience.

Editor THE AUTOMOBILE:—

[156].—I note in the issue of THE AUTOMOBILE, under date of January 21, your remarks regarding commercial travelers who, being particularly well able to pass upon the merits of transportation methods from a business standpoint, are taking very kindly to the automobile.

For the past six months the writer has been using an Apperson Bros. 24-horse-power car in pursuit of his business as a traveling salesman, and thinking perhaps it might be of some interest to your readers, I give you the result of my experience.

My entire expense for repairs (including tires, which are of the 4-inch Diamond type) during the time mentioned has been exactly 75 cents. I have used my car almost every day, regardless of the weather, through snow and mud, making runs of from twenty to one hundred miles in a day, and experienced no trouble at all except one puncture which delayed me perhaps twenty minutes. My expense account has been well within the bounds of the amounts expended by me before using the automobile, and I have been able to cover almost if not quite double the amount of territory, thereby doing about double the business that would have been possible by the old method, and with about the same expense account at the end of the week.

Before this I tried using a lighter machine, but my expenses were high on account of repairs and so much time was lost that I was unable to continue using an automobile for transportation until I got the heavy car I now have.

The automobile will certainly give the traveling man results that will astonish him if he will profit by the experience of others and start with a good heavy machine and not one too light to do his work under all conditions and over all kinds of roads. The increased territory and business which he can make will soon pay for the price of a high-grade machine.

WILLIAM M. MYERS.

Marion, Ind.

The Photographic Phenomenon.

Editor THE AUTOMOBILE:—

[157].—At the Automobile Club some time ago a discussion arose regarding the angle of the radiator and the elliptical form of the front wheels, as shown in a photograph of a car moving at high speed. The discussion arose from the writer having made the statement that one could approximate quite closely the time it took the shutter on the camera to close by figuring the speed of the car and the angle of the radiator. It was contended that this could not be done, and I endeavored to prove that it could be done in the following manner:

The speed at which the car was traveling was practically 90 feet per second, which we will also give as the speed of the hub in passing the camera. The lower part of the wheel is, for the object of this illustration, standing still, as shown by the distinct outline of the spoke, and the upper part of the wheel, or top of tire, must be passing the view of the camera at double the speed of the car, or 180 feet per second. Taking the diameter of the wheel, this would give us approximately 150 feet per second for the inside of the felly. At this point the movement of the spoke while the shutter was closing is quite distinct, and, comparing the space with other portions of the car of which we know the dimensions, we find that the top spoke has passed through four inches, or one-third of a foot, which, multiplied by the 150 feet per second, makes 1-450th part of a second, the period of time

DISTORTION OF CAR PHOTOGRAPHED AT HIGH SPEED.

occupied by the shutter in closing. You will notice that the spoke at right angles or horizontal has about one half of this movement.

W. S. H.

Yonkers, N. Y.

While it is perhaps possible to arrive at a rough approximate determination of the duration of exposure by the means described by our correspondent, anything like an accurate calculation is out of the question; first, because the distortion of the image prevents accurate measurements on the print, and second, because the amount of distortion or inclination of the moving object is affected not only by the length of exposure but also by the distance of the camera from the object and whether the camera was held stationary during exposure or was swung slightly by the photographer while the exposure was being made.

In the accompanying engraving is shown the front of Heath's Panhard as photographed when it was making nearly ninety miles an hour in the Vanderbilt Cup race last October. The original photograph, which showed the complete machine with its occupants, was made by one of the most expert professional newspaper photographers of New York, especially for THE AUTOMOBILE, and was remarkable from the fact that the car was photographed broadside on at a distance of only about thirty feet and, although it fills most of the plate, it is perfectly centered in the picture. The picture was taken with a focal plane shutter—the fastest kind made—working up to the 1-1,000th or 1-1,200th of a second.

The distortion of the image is a phenomenon that occurs only with this type of shutter; with the ordinary shutter or the iris shutter, which expose the entire plate at once and can be speeded up to only 1-100th of a second, the image of a rapidly moving object at such close range would be an indistinct blur or streak. The focal plane shutter is an opaque black cloth curtain arranged immediately in front of the glass plate in the camera and winding up on small spring-actuated rollers at top and bottom, after the manner of window shades. In the curtain is a tranverse adjustable slit that moves down across the front of the plate when the shutter is released, exposing the surface of the plate progressively from top to bottom, or, as the image on the ground glass is inverted, from bottom to top of the picture. The period of exposure is regulated in two ways—by the width of the adjustable slit in the curtain and by the speed of the curtain as the slit moves in front of the plate. The shortest exposure is obtained by reducing the slit to about 1-8th of an inch and winding the roller spring up to its greatest tension.

It will be seen that, as the bottom of the image is exposed first and the top last, there is an appreciable difference in the time of exposing the point of contact of the wheels of a moving car with the ground, and of the time of exposing the top part of the vehicle, which in the accompanying engraving is the top of the hood. In this brief period the whole car has moved forward a distance depending on the speed of the car and the speed of the shutter slit in moving in front of the plate. Therefore, every point on the car, as it is successively exposed, is a trifle farther forward than the point exposed immediately before, which results in a uniform inclination forward of the whole object. Neglecting the other factors mentioned at the beginning of this answer, if the speed of the moving object were positively known, the time that elapsed between the exposure of the bottom of the forward wheel and the top of the hood might be calculated by determining the distance that a point on the top of the hood known to be vertically above the point of contact of the wheel with the ground, had moved forward out of the vertical. In the present case this distance is approximately fifteen inches. If the car was going ninety miles an hour, or 1,416 inches a second, this would give 1-90th of a second as the time of the

movement of the curtain slit across the image. This, however, will not give the duration of exposure, which is but a small fraction of this, depending on the width of the slit. If this were 1-8th inch and the image 1 7-8 inches high, the period of exposure on any one point would be 1-15th of 90, or 1-350th of a second. This is doubtless excessive.

Basing a calculation on the formula given by our correspondent, we find in the original photograph a movement of the top of the upper spokes of the wheel, which, if projected out to the periphery of the tire would be approximately six inches. As the hub moves forward just half as fast, we find by dividing 1,416 (the number of inches the car was moving per second) by 3, (the number of inches the hub moved during exposure), that the quotient is 472, indicating that the exposure on any one point was 1-472nd of a second—which is known to be only about one-half the speed of the exposure as made.

High and Low Tension Igniters.

Editor THE AUTOMOBILE:—

[158].—I am very anxious to learn about the high-tension magneto system of ignition for four-cylinder gasoline engines. Will you kindly give information in regard to its principles, and also its cost of installation as compared to the battery and quadruple coil high-tension system. E. W. D.

Newton Centre.

There are two systems of magneto ignition, broadly speaking. In one the magneto generates a current at a low tension, and a special coil is used to transform this to the necessary high tension. This is the variety best known here. In the other system, the magneto generates the current at the tension required to jump across the sparking points of the plug, so that no coil is required. Both systems are made to work without batteries, as with a magneto current sufficient for ignition purposes can be generated at low speeds, while at high speeds the current will not reach a harmful strength, owing to the electrical peculiarities of the machine. With a dynamo, on the other hand—that is, a generator with wound fields and no permanent magnets—the current generated at low speed is so feeble that batteries must be used for starting the motor, while its strength continues to gather with the increase of speed until it reaches a point which would overheat and possibly burn out the generator if some means of governing the speed were not provided. Therefore, the dynamo igniters are always fitted with governors. There are, however, manufacturers of dynamos who claim that their machines will do all the work, without the use of batteries.

The cost of installing a high-tension ignition system with mechanical generator would of course be considerably greater than the cost of battery-and-coil system, just how much more would depend largely upon the particular system selected. The increasing number of automobiles in which mechanical generators are used, however, would seem to indicate that in many cases the advantages outweigh the expense. Batteries naturally are at a great disadvantage when used for the ignition of multiple cylinder motors, as the drain on them is exceedingly heavy and they are soon exhausted; while the generator will furnish plenty of current so long as it is in good order, mechanically and electrically.

Motor Delivery Wagons in Harrisburg.

Editor THE AUTOMOBILE:—

[159].—The results secured from the faithful and lively little cars shown in the photograph that we are sending you herewith have proven most emphatically that the automobile, as an economical and speedy delivery wagon, is a decided success.

Day in and day out, rain or shine, snow or blow, right through the season, they could be seen spinning about the streets, their little chuck-chuck as they sped around the jogging horse telling the poor animal that they would be there and back before he was well on his way.

During the holidays it was a regular sight to see the two department store wagons pull out many times a day loaded to the very roof, beginning about 8:30 a.m., and getting through any time from 9 to 11 p.m. To add to the test they had to plow through the snow during many of those busy days, but did their work regularly, notwithstanding the adverse conditions.

Two of the wagons are owned and used by the two leading newspapers of Harrisburg. It is a convincing sight to see these cars hustle the papers to the trains as fast as they come from the press, then pick up as many as seven boys and their bundles of papers (besides the operator) and spin about town, dropping each carrier where his route begins. The newspaper men are more than pleased with the results, looking at them both from the point of service and of advertising.

The tops of the wagons are fitted on standard "A" Cadillac chassis and are so designed that the whole inside is available space, the largest one having a capacity of about 72 cubic feet. They were built at the I. W. Dill Carriage Works, in Harrisburg. Mr. Dill is proprietor of the Central Pennsylvania Automobile Company, which sold the machines and which stores the wagons at its garage. The automobile company is well satisfied with the record of never having found it necessary to bring any one of the wagons home by outside power.

The average running cost, exclusive of tires, storage and gasoline, has not been more than $3 a month for each car, and two of them have been running for more than six months without any tire expense.

CENTRAL PENNSYLVANIA AUTO CO.,
C. C. Crispen, Manager.

Harrisburg, Pa.

More Information Necessary.

Editor THE AUTOMOBILE:

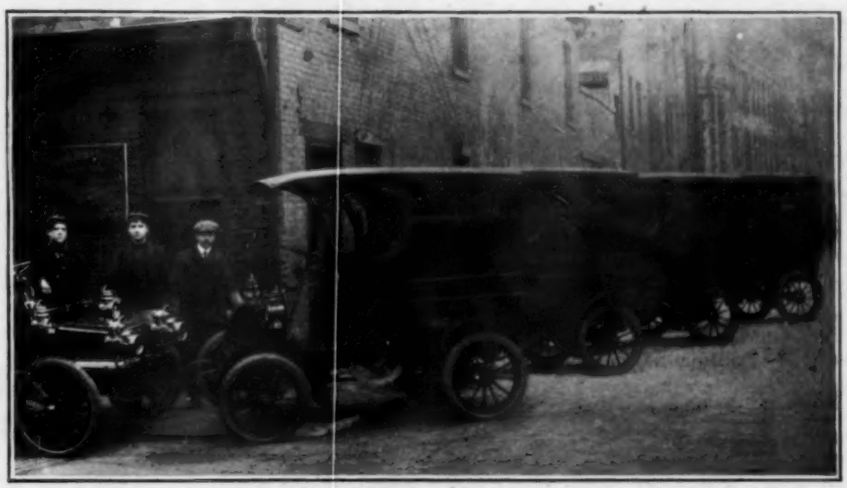
[160].—I have in my possession a 4 1-2 by 5 horizontal motor. Could you give me advice as to the missing of explosions of the motor? I have wired it single and double; that is, with one set of batteries to each cylinder, and cannot get satisfactory results, as both cylinders will not work together.

L. M. B.

West Alexandria, Ohio.

Your description of the motor is too vague for us even to suggest the cause of the trouble. Without a detailed description of the motor, or a drawing, we are unable to help you. Are the cylinders opposed? Is the ignition by high tension or make and break? Are the inlet valves automatic or mechanically operated? What carbureter is employed? Is the engine air cooled or water cooled?

Skidding is frequently caused by the too violent application of the brakes and also by unequal distribution of the braking power, as when the brake band on one hub is tight and the opposite one slack.



TYPE OF MOTOR DELIVERY WAGONS NOW IN USE IN HARRISBURG, PENNSYLVANIA.

THE AUTOMOBILE

VOL. XII. No. 8

Published every Saturday by
THE CLASS JOURNAL CO.,
Flatiron Building, Madison Square,
NEW YORK CITY.

Cable Address - - - - Autoland, New York
Long Distance Telephone - 300 Gramercy, New York

SUBSCRIPTION RATES:

United States, Canada and Mexico, - One Year, $2.00
Other Countries in Postal Union, - One Year, $3.00

To Subscribers—Do not send money by ordinary mail. Remit by Draft, Post-Office or Express Money Order, or Register your letter.

FOREIGN SUBSCRIPTION AGENTS:

ENGLAND:—Iliffe & Sons, Limited, 3 St. Bride Street, Ludgate Circus, London, E. C.
FRANCE:—Boyveau & Chevillet, 22 Rue de la Banque, Paris.
GERMANY:—A. Seydel, Mohrenstrasse 9, Berlin.

To Advertisers—Copy or changes in orders for advertisements should reach us not later than 5 o'clock p. m. Monday for the issue of Saturday following.

Copyright, 1905, by The Class Journal Company.

Entered at New York, N. Y., as second-class matter.

The Automobile is a consolidation of The Automobile (monthly) and the Motor Review (weekly).

Copies Printed in 1904, - - -		**639,300**
" "	**This Issue, - -**	**14,000**
" "	**Since Jan. 1, -**	**116,200**

The Annual Shows. Most persons in the trade labor under the impression that automobiles are made to be sold. Yet any outsider who visited the recent shows in the East and West would find it difficult to believe that manufacturers are in the business seriously; they might even reasonably believe that the manufacturers had gotten their exhibits together for the purpose of dissuading individual buyers from becoming interested in automobiles. Experiences at the recent shows suggest the query, "Isn't it about time that a little common sense was mixed into the show proposition?"

To discuss the merits of a car with a prospective buyer in an ill ventilated, overheated and crowded building, and to immediately thereafter whirl him through slippery streets, in a temperature below zero, is not good business, and it certainly does not indicate the possession of the saving grace of humor or even common sense.

As an effective appeal to the purchasing public, an automobile show in a blizzard is about as appropriate as an ice cream festival in Greenland. Granted that the automobile is an all-the-year-round vehicle, people in the eastern and western states do not indulge much in tours and neighborhood trips with the mercury in the minus column. How far the situation is brought about by the desire of a few behind the box office window for personal gain may be left to even a dull imagination.

There is a satisfactory undercurrent of dissatisfaction, however, that speaks for more sensible methods. It is certainly a subject worthy of study, for its relationship to the industry is vital. Conditions have radically changed in the industry, young as it is, from the days when a maker put on exhibition a merely tentative design at a show, and then went there to shape his plans for the future on what the other fellow was doing.

Here, as abroad, the automobile in its various sizes and types is rapidly becoming standardized. The manufacturers are finding themselves. They have learned that experience with their own forms and materials of construction, year by year, is worth a whole lot more than any knowledge of what the other fellow is doing, picked up at second hand at a show. Yet the missionary days are not over, and as matters stand it is necessary to bring their output to one place every year, so that the retailer can look over the lot and select such as are suited to his section. To this end there seems to be a need for a great national trade show, to be held once a year in the center that sets the fashion for the rest of the country—New York, which bears the same relation to the rest of the country that London does to Britain, and Paris does to France. This should be by the trade and for the trade, and, ideally, should not be considered as a source of personal gain.

Held in the late fall, this show would bring the manufacturer in touch with his trade, and give him a basis to work on for the output of the following year. Later in the following spring, when the weather was propitious, and when the builder had cars to deliver in quantity, a public show of a more elaborate character, partaking to an extent of a social function, could be held in each center as now. Such a show would be local in character, exhibiting cars that would fill sectional needs, and preferably managed by the local dealers, who would be reimbursed out of the gate profits for the special expenditures away from their own private establishments.

In such an arrangement there would be no conflict of interests in the purposes of each show. The national dealers' show would appeal only to the trade, and while there would probably be no gate receipts, there would be no expenditures for decorations and the like, and, if necessary, the hours of opening could be confined to daytime. A large number of cars from each exhibitor would be unnecessary. Samples, aided by blue prints and photographs, would serve the purpose. At this show the parts and accessory manufacturers would also have proper representation, and their attention would not be taken up by the merely curious and by souvenir hunters.

At the local popular shows the individual buyer would receive undivided attention, and the absence of trade distractions would permit a large development of the social and artistic features, the sales value of which seem as yet little understood in this country.

✷

The Future of the A.A.A. In the election of ELLIOT C. LEE to the presidency of the American Automobile Association, those who have at heart the interests of the sport of automobile racing find encouragement. Though unknown in a national sense, yet locally in Boston and its neighborhood he has won good opinions for ability and earnestness in his work as president of the Massachusetts Automobile Club. He is a man who is undoubtedly free from the factional influences which have been allowed to interfere with the real work that the Association should undertake, and we trust and believe that he will not permit the Association to be made use of as a weapon of attack in private disputes. It is an open secret that the indefensible and, as it turned out, disastrous interference of the Association in the management of the Florida tournament, under cover of the local Florida organization, really originated in the desire of a clique to "get back" at the original promoter of the meeting for personal and business reasons. It is fair to say that some, at least, of the officials of the Association were not aware of this influence at all, and weakly allowed themselves to be overpersuaded into such action as was taken, not searching for the motives underlying the promptings of their advisers.

Coming into the office of president free from any such entanglements, MR. LEE has an opportunity to rehabilitate the Association and give it the place in the esteem of lovers of the sport and of the public that it should hold.

For a great variety of reasons it is desirable that control of automobile racing should remain vested in the American Automobile Association, principal among which are that it represents the amateur, or purely sporting interests, and is national and not sectional in character. It has also a historic connection with automobile racing that, naturally, no newly-organized body could possess. To retain this control, however, the officers of the organization must come to a full realization that with privileges come responsibilities. It cannot bluff or intrigue its way into public confidence.

The passing of control of automobile boat racing into the hands of the American Power Boat Association ought to be a lesson by which the American Automobile Association should profit in its control of racing on land. Its present supremacy is threatened more seriously than even some of its officers are aware by the dissatisfaction of the race track managers throughout the East and Middle West, at any rate.

Their chief cause of complaint is the shirking of responsibility by the A.A.A. in maintaining proper discipline in track meetings. As the public, which pays admission to tracks, has no well defined idea of the extent of the A.A.A.'s control, it blames the track managers, and they earn a reputation for bad faith for which they are in no way responsible.

For instance, in the past racing season it was the practice of many owners of cars to enter them for competition at meetings apparently for the sole purpose of the advertisement they would get, and, apparently, without the least intention of actually racing the cars. Other owners entered cars in good faith, and then, after finding from the official program that cars of superior speed qualities were entered in the same events, have failed to start, because they were not certain to win. The track managers, accepting all entries in good faith, have publicly announced on their programs and by advertisements that such and such cars would be seen in competition. Patrons of the sport of automobile racing have gone to the tracks expecting to see the cars race, and have been disappointed again and again, until they have lost confidence in the track managers. Yet the latter have no power whatever to discipline the makers of false entries. The power to discipline rests solely with the American Automobile Association, and its officials shut their eyes and ears and do nothing. Lax enforcement of the rules at a meeting, necessitating long and unnecessary waits, jockeying on the track and cowardly driving are also causes of irritation which the A.A.A. has hitherto made no serious effort to suppress.

There is not the slightest doubt that a continuance of the do-nothing policy will lose the A.A.A. the control of track racing in America, just as certainly as in the old days of bicycle racing the control of the sport passed from the League of American Wheelmen to the National Cycling Association, organized by the track owners, and which to this day is the supreme body in cycle racing.

Apologists for the A.A.A. attempt to explain its action, or rather inaction, by saying that the sport of automobile racing is young, and that laxity is necessary in dealing with those who now participate in races, especially star attractions. This is baby talk. Nothing worth while in sport or outside was ever built up on other than lines of sound progress; in fact, the very youth of the sport imposes on its guardians special care that the growth shall be toward a healthy maturity. Precedents are now being established that must influence the sport in years to come; if for the right, well and good; if for evil, the result can only be disastrous.

As to the immediate future of the organization in its relation to the sport of racing, we believe the collective wisdom of its membership, as expressed through competent officers, ought to evolve the best plan of campaign. Suggestively, however, we believe that there should be no delay in appointing an executive staff that would provide for the management of meets, including starting, timing, record keeping and the like. A sufficient number of salaried officers should be appointed to follow the circuit; men who are thoroughly competent to perform the duties entrusted to them, and being paid salaries and not merely acting in an honorary capacity, would be under discipline themselves and would give their entire time to the practical management of races. With this responsible representation in the field, and well directed and continuous work at headquarters, an immensely strong organization could be built up in a comparatively short time.

We sincerely trust that the change in the president's chair will work the necessary good and maintain the organization in control of automobile racing. Any and all sportsmanlike effort in this direction will have our entire support and co-operation.

A. A. A. Adopts Outline of a Policy.

A special meeting of the board of directors of the American Automobile Association was held at the rooms of the Automobile Club of America, New York City, on Friday, February 17, and the matter of formulating a definite policy was discussed at length. It was the feeling of the members of the board that the work of the association had grown to such an extent that something more than a tacit understanding of the objects of the organization was necessary, and also that there was a broader field to be covered than had heretofore existed. The result of the discussion was the adoption of the outline of a policy, subject, however, to amplification as to details. The following was adopted:

First.—To unite in one national body the automobile clubs of the United States, and through them the individual automobilists.

Second.—To promote and further all matters of a national character in which automobilists are interested and particularly these:—(a) legislation, (b) good roads, (c) control of racing.

Third.—To provide for its members actual benefits and particularly these:—(a) reciprocal club privileges, (b) bureau of information concerning laws, touring routes, road maps, racing statistics and similar subjects; (c) a medium for the exchange of ideas and information of value to clubs in furthering their promotion and usefulness and of value to individual automobilists.

Another subject of discussion was the incorporation of the association, authorized at the annual meeting held during the Madison Square Garden automobile show. The matter is in the hands of James B. Dill, who expects to have the necessary documents filed early in March.

No action was taken with regard to the resignation of W. C. Temple as chairman of the Racing Board, owing to the fact that he has not yet replied to the letter requesting him to reconsider the matter. Mr. Temple is in Florida, and further action was deferred pending receipt of a communication from him. If he persists in his determination to resign, it is likely that a new chairman will be elected at the next regular meeting of the board of directors, which will be held March 9.

It was decided that Vanderbilt Cup Race preparations should begin as soon as possible in order that there might be ample time to make all arrangements for a successful contest, and a meeting of the race committee will be called at the earliest practicable date to make a start. While, according to the deed of gift, the entry list should close on March 15, Mr. Vanderbilt before his departure for Europe consented to postponing the closing for a month, until April 15, which, as the matter now stands, is the closing date. It was thought by the directors, however, that many more entries would be forthcoming if a still further delay could be secured, and therefore a letter has been sent to Mr. Vanderbilt asking his consent to a postponement until May 15 or even later. A reply is expected in time for the board of directors to take action in the matter at the next meeting. No entries have yet been received, and none are expected until the closing date approaches.

The Saxe automobile bill now pending at Albany was condemned with fervor, as well as other bills framed, apparently, in the same anti-automobile spirit. Many prominent automobilists will attend the hearing on the Saxe bill, which is to be held at Albany on February 28, and put up a strong fight against its passage. The fact that the bill permitting automobiles to run on and off ferry boats under their own power had passed both the House and the Senate at Washington elicited expressions of deep satisfaction.

Elliot C. Lee, the new president of the association, presided over the meeting, and the other members present were Dave H. Morris, president of the A. C. A.; John Farson, president of the Chicago A. C.; George E. Farrington, president of the A. C. of New Jersey; R. L. Lippet, of the Rhode Island A. C.; Windsor T. White, president of the N. A. A. M., and C. H. Gillette, secretary of the A. A. A. Ex-Chairman of the Racing Board A. R. Pardington was out of the city, but had already expressed his approval of the proposed policy.

TO WORK FOR UNIFORM LAWS.

Special Correspondence.

CHICAGO, Feb. 20.—President Farson, of the Chicago Automobile Club, who has just returned from Friday's meeting of directors of the A.A.A. in New York, says:

"At the meeting in New York some of us very vigorously advocated the policy of making the racing feature of the Association secondary and not the paramount one. While we believe in racing under proper auspices and properly conducted, we do not think that it is the principal purpose of the organization.

"There is no doubt that the committees on good roads and on legislation will formulate policies that will be advantageous. A bureau of information was authorized, so that the laws of the various states on the good roads question, and also the laws governing the operation and use of automobiles could be tabulated and the information given to the various clubs throughout the country, to the end that ultimately as nearly uniform laws as possible could be placed on the books. The good roads committee was also instructed to prepare a national good roads bill."

Auspicious Opening of Cleveland Show.

Unprecedented First Night Attendance Despite Rainy Weather —Visitors Well Posted and Ready to Purchase.

Special Correspondence.

CLEVELAND, Feb. 20.—The same old "blaze of glory" which has done service at every automobile show since the game was invented ushered in the third annual exhibition of the Cleveland Automobile Club, at the Grays' Armory this evening. The show circuit chasers, who were greeted with below zero weather at Chicago and Detroit, here found a warm drizzle that is rapidly melting a three weeks' accumulation of snow, making the streets and sidewalks a quagmire of slush and ice, which makes any kind of navigation disagreeable. But for all that, the crowd this evening was a pleasing surprise, both as regards quantity and quality. The attendance was larger by nearly 1,000 than it was the first night last year.

There is only one great fault to find with the show—the building is not half large enough. For years Clevelanders have been talking of a large building suitable for exhibitions, and it seems as if it must come if Cleveland is ever to have another automobile show, for the Armory has outlived its usefulness so far as automobile exhibitions are concerned. The show management did some remarkable work with figures when it measured out the spaces this year, and its aim, to get the largest number of exhibitors into the smallest possible number of spaces, was well carried out. The demand was such that not a concern could secure more than half the space it wanted. This was well enough for the manufacturers who have only one or two models of cars, but the larger dealers, who have four or five lines, with three or four models in each, simply had to select a few of their best cars, and leave the others at their garages. Some of them will display one car for a day or two, and then replace it with another model. One big dealer declined to be satisfied with a couple of slices, when he wanted several loaves, so he secured a nearby store and fitted up an annex of his own, where he is displaying everything he handles.

Naturally, every space is cramped, leaving little room for cozy corners or settees, which forces those who want to sit down to try the seats in the various cars.

Opening Night a Society Event.

This evening was society evening, and the bad weather made little difference to those who came in their own turnouts. The members of the Cleveland Automobile Club were out in full force, and there was a larger percentage than usual of women in evening costume. Evening dress for the attendants was also the rule. The annual automobile exhibition is becoming as much of a society event for Clevelanders as the annual horse show. In fact, there is no better place to display handsome toilets than the luxurious seat of a shining automobile, surrounded with palms and flowers.

It is easy to distinguish between those who are able to tell the difference between a locomotive and an automobile, and those who swing around sharp corners at the rate of thirty miles an hour, missing telegraph poles by perhaps a few inches. The uninitiated seat themselves with a languid air on the soft cushions, ring the electric bells and pull the indicators for imaginary chauffeurs. The sophisticated, who come to the show to learn the new wrinkles, burrow into the innermost mechanism of the cars to satisfy their longings for knowledge, and appear to care little when they emerge smeared with oil and grease. The men were not the only visitors that displayed interest in the construction of cars. In Cleveland it is no longer an uncommon sight to see a big touring car loaded exclusively with women, and handled by a member of the fair sex, whose every move indicates that she knows what she is doing. The women who are at all interested in motoring have made a close study of the construction of cars, and ask surprisingly intelligent questions.

Want to Learn Fine Points.

Purchasers are paying more attention to details than formerly. During the past year or two tremendous strides have been made by manufacturers towards standardization, and the general run of gasoline cars are so much alike, and people have become so educated to their use and construction, that it is no longer a question of explaining general principles; inquirers want to learn the fine points. The many factories here and the large number of men employed in them, together with the wide sale of cars here, seem to have spread automobile knowledge among a larger number of residents than is usual in other cities. A salesman who had been at all the previous shows this season said this evening: "I never struck a place where so large a proportion of the people seemed to be informed about automobile construction as in Cleveland. The people know what they are talking about and what they want, and it is much easier to do business with this class than with those who know little or nothing about a car."

Automobile enthusiasm is evident on all sides, and it is a safe prediction that this season will be the best ever known for local dealers. More people are using their cars all winter than before, and many visitors have already made up their minds what they want for the season and are ready to place their orders. Last year few orders for cars were placed until late in the show week, but this evening scarcely an exhibitor of automobiles failed to take one or two actual orders.

The side-entrance body and the Cape top will be responsible for many sales. The limousine body is another feature that has taken the popular fancy, as the perfect shelter offered by the closed body in all weathers appeals to every one.

De Luxe Electric Surrey.

While the lines exhibited are more diversified than before, giving Clevelanders the opportunity of seeing more varieties of cars than heretofore, there is little that is radically new for those who have visited the New York and Chicago shows. In fact, only two cars and two or three articles in sundries are exhibited for the first time. Prominent among the new products is a very fine electric surrey built by the Parsons Electric Motor Carriage Co., of Cleveland. This company has just entered the field, and the machine exhibited is the first completed. The car will be known as the De Luxe, and it is the intention to build only this one type this year. It has side entrance to the rear seat and running-boards between the wheels. It sets rather high, having 36-inch artillery wheels, with 4 1-2-inch Palmer thread fabric tires, which are being widely used on electrics. There is a hood in front covering twelve cells of Willard battery, and there is a similar battery set under the rear seat, thus distributing the weight. A special motor, built by the Hertner Electric Co., of Cleveland, is hung transversely below the front seat and drives by a double chain system to each rear wheel, a dead rear axle being employed. The motor is rated at 2-horsepower, but may be overloaded to 5-horsepower without danger. The weight of the car is 1,850 pounds, and some remarkable mileage demonstrations have been made with it. On the Glenville track recently it covered 124 miles with one charge, while a run of 114 miles has been made over city streets. The controller gives three speeds, ranging from six to nineteen miles an hour. The frame is of pressed steel, and by removing four nuts the body can be lifted off and a station wagon body substituted, making practically two cars in one. The body shows graceful lines and it is handsomely finished in royal blue. The upholstering and leather work are of the most expensive kind.

Gaeth's Gasoline Touring Car.

Paul Gaeth, a local manufacturer who has confined his selling efforts almost entirely to Cleveland, exhibits an attractive side-entrance touring car. It has a vertical four-cylinder 24-horsepower motor under the bonnet, the cylinders cast in pairs. The secondary shaft, with exhaust cams, is housed in the divided aluminum crank-case. The lift of the intake valves is regulated in conjunction with the throttle. A commutator is situated below and forward of the radiator on the secondary shaft. The clutch is of the internal expanding type, leather to metal, actuated by cone, and operated by one lever at the right side of car. The transmission is on the planetary system, with two forward speeds and reverse. Gears are cut from forged steel and run in an oil bath. A honeycomb radiator and tank are combined, using the thermo-syphon system for circulation. A quadruple vibrator coil, jump spark and two sets of dry cells in box on the running-board furnish the ignition. A six-quart oil tank, with valveless pumps, supplies oil to the crank-case, with splash to cylinders, exhaust valve cams and shaft bearings. Drive is by bevel gear on a roller bearing propeller shaft, with a single universal joint, to 1 1-2-inch enclosed rear axle. The wheelbase is 102 inches. A lever at the operator's right controls the forward speeds and a foot pedal the reverse. The throttle and spark levers are on the steering wheel, and there is an auxiliary throttle on the footboard. The car has a graceful tonneau, seating five passengers.

Hussey Wheel and Step Novelties.

P. L. Hussey, of the Hussey Drop Forge & Mfg. Co., this city, never fails to bring out something "brand new" for the Cleveland show. His latest production is a steering wheel fitted with gutta percha grip. He claims that while it possesses a certain yielding quality, there is no friction or suction to cause blisters on the hands in long drives. Perforated steps and step brackets made from forgings are another Hussey novelty. The company is making forgings for more than twenty automobile manufacturers, and a large variety of samples are shown.

Complete List of Exhibitors.

The complete list of exhibitors and their lines follows:

Reo Motor Car Co., Cleveland, Otto Owen, manager—Reo cars.

Automobile Garage & Repair Co., Cleve-

land, George H. Smith, manager—Autocar, Packard and Cadillac cars and Continental tires.

Fisk Rubber Co., Cleveland—Fisk tires.

W. N. Booth Car Co., Cleveland—Pope Tribune and Pope Hartford cars.

Cameron Motor Car Co., Cleveland, E. W. Gurley, manager—Cameron cars.

Parsons Electric Motor Carriage Co., Cleveland—Parsons electric cars.

Badger Brass Mfg. Co., Kenosha, Wis.—Solar lamps and horns.

Veeder Mfg. Co., Hartford, Conn.—Veeder odometers and tachometers.

Gray & Davis, Amesbury, Mass.—G. & D. lamps.

Wayne Automobile Co., Detroit—Wayne cars.

Hartford Rubber Works Co., Cleveland branch—Hartford and Dunlop tires.

Cleveland Clasp Co., Cleveland—The E-Z-ON veil clasp.

Hussey Drop Forge & Mfg. Co., Cleveland—Forgings and specialties.

Lorain Automobile Co., Lorain, O.—Elmore Pathfinder cars.

Diamond Rubber Works, Cleveland—Diamond tires.

National Carbon Co., Cleveland—Carbon specialties, batteries and flashlights.

G & J Tire Co., Cleveland branch—G & J tires.

Cleveland Motor Car Co., Cleveland—Cleveland touring car.

B. F. Goodrich Co., Cleveland—Goodrich tires.

Standard Oil Co., Cleveland—Mobile oils for lubrication.

Edmonds & Metzel Mfg. Co., Chicago—Universal grip.

Sprague Umbrella Co., Norwalk, O.—Automobile tops.

Gabriel Horn Mfg. Co., Cleveland—Gabriel horn.

D. E. Foote Rubber Co., Cleveland—Goodyear tires.

Bullock-Beresford Co., Cleveland—Bullock igniter.

Cleveland Tanning Co., Cleveland—Leather.

Swinehart Tire Co., Akron—Swinehart solid tires.

S. F. Bowser & Co., Ft. Wayne, Ind.—Gasoline storage outfits.

Hartford Suspension Co., New York—Hartford shock absorber.

Morgan & Wright, Cleveland branch—M. & W. tires.

20th Century Mfg. Co., New York—20th Century lamps.

Rose Mfg. Co., Philadelphia—Lamps.

Electric Storage Battery Co., Cleveland branch—Exide batteries.

R. H. Magoon Motor Car Co., Cleveland—Pope-Waverley and Pope-Toledo cars.

Ohio Oldsmobile Co., Cleveland—Olds and Franklin cars.

Price Brothers Carriage Co., Cleveland—Baker electric cars and charging outfit.

White Sewing Machine Co., White Garage, Cleveland—White steam cars.

Paul Gaeth Automobile Co., Cleveland—Gaeth touring car.

F. B. Stearns Company, Cleveland—Stearns touring car.

Royal Motor Car Co., Ohio Sales Agency, Geo. S. Waite, manager, Royal tourist car.

Chisholm & Phillips' Automobilium, Cleveland—Peerless, Knox, Stevens-Duryea and Northern cars.

Winton Motor Carriage Co., Cleveland branch, C. M. Brockway, manager—Winton cars.

Ohio Motor Car Co., Cleveland—Orient, Buick, Columbia and Locomobile cars.

T. C. Whitcomb, Cleveland—Premier, Ford, Rambler and Maxwell lines, shown in the Browning Building, one block from the Armory.

MAY SEEK DAMAGES.

Manager of Boston Importers' Salon Aroused by N.A.A.M. Letters.

Special Correspondence.

BOSTON, Feb. 20.—Efforts of the manager of the National Association of Automobile Manufacturers to keep its members from exhibiting their products at the unsanctioned Importers' Automobile Salon, which opens in Symphony Hall, March 13, simultaneously with the sanctioned show of domestic and foreign cars to be held in Agricultural Hall, have aroused the ire of Manager W. E. Eldredge, of the Importers' Show.

In a letter addressed to members of the N.A.A.M. who are alleged to have reserved space for the Importers' Salon, the manager of the National Association writes: "Your attention is respectfully called to the fact that, under a resolution adopted by this association, any one who participates in an unsanctioned show will not be permitted to take part in a sanctioned show at any time within eighteen months. This resolution covers all of the shows, both national and local, to be held this year or next."

Under date of February 16, in a letter addressed to Manager Miles, Manager Eldredge, of the Importers' Salon, states that he has a large collection of "autograph and mimeograph letters recently sent out by you, in which you attempt by threats to intimidate exhibitors in the coming Symphony Hall show. If, after the show is over, I find that you have succeeded in damaging my business to an appreciable extent, I shall act accordingly." He further states that so far only one intending exhibitor has relinquished his $60 space as a result of such letters, and asks how the N.A.A.M. can pretend to consistency, in view of the fact that the manager of the sanctioned Boston show went to the Importers' Salon in New York and solicited exhibitors in that unsanctioned exhibition to show in the sanctioned exhibition to be held in Agricultural Hall here, and afterward sold space in the latter show to such "outlaw" exhibitors.

AUTOS FOR RAILROADS.

Colorado Roads to Try Gasoline Coaches and Inspection Cars.

Special Correspondence.

DENVER, Feb. 18.—Arthur Ridgway of Silverton, Colo., general manager of the Silverton Northern Railroad, is on his way East to meet the directors of the road, who will there complete plans for extensive improvements to their line. A railroad automobile service has been definitely decided upon by the directors, and the order for the first auto was placed with the manufacturers some time ago. While East, Mr. Ridgway will examine the machine and attend the first tests made with it. The new service will be installed early this spring.

At present but two machines will be used on the road. They will weigh ten tons, and will accommodate thirty passengers each. They will be equipped with rubber tires made to fit over the rails of the track. Gasoline will be used for propulsion, and it is believed that a speed of fifteen miles an hour can be made on the up-grade trip, the average grade being 8 per cent. The railroad is sixteen miles long, connecting the towns of Silverton and Animas Forks. Along its route are located three mills and five large mines, all of which employ large forces of men. The automobiles will be used for passenger service exclusively, and they will prove a great convenience to miners and millmen going to and from work, and to Silverton people who have business at the mines. The trip from Silverton to Animas Forks and return, it is believed, can be made with the automobiles in three hours, including all stops.

The Denver & Rio Grande and the Missouri Pacific railroads, which are controlled by the George J. Gould interests, are contemplating installing an automobile service. This, however, will not be for the accommodation of passengers, but will be used to render greater safety to passenger trains. During the spring and summer months in certain parts of this state the railroads have to be very cautious on account of washouts caused by heavy rains and cloudbursts. A person in a swiftly moving automobile running on the track ahead of a passenger train during such seasons would quickly detect any damage to bridge or track, signal the train behind, and thus avoid a possible wreck.

It is pointed out that a service of this sort would have been invaluable in the case of the Eden wreck on the Denver & Rio Grande last June. In this instance a train passed over the Eden bridge in safety less than an hour before the bridge was swept away by the flood. A cloudburst above the bridge caused the water to come down the arroya like a wall. It washed out the bridge, and within an hour afterwards the arroya was comparatively dry again. The second passenger train, the one that was wrecked, came along just after the bridge had gone out and plunged into the torrent, causing the loss of about one hundred lives by drowning.

RAILROAD AUTO SERVICE.

California Steam Line Runs Flanged Wheel Autos Under Dispatcher's Orders.

Special Correspondence.

SAN FRANCISCO, Feb 14.—The Sierra Railroad of California is the first to make practical commercial use of the idea of flanged wheels on automobiles for use on railroad tracks having established a regular service with railroad inspection automobiles on its lines, beginning February 1. The Sierra Railroad extends from Oakdale to Jamestown, and is one of the roads on the Yosemite route.

In the last regular schedule issued, the company announces the inauguration of a regular service of automobiles to be run under orders from the train dispatcher's office, the same as regular trains. These automobiles can be hired at the rate of one full fare for the round trip for each passenger carried between the terminal points of the trip, plus $5 an hour and actual expenses of the chauffeur while in service. The time of service is computed from the time the automobile leaves the roundhouse until its return, and the minimum charge is set at $15. The cars will carry three passengers, and may be engaged by applying to any agent of the company or to the general passenger agent at Jamestown, Cal.

The temperature attained by the burning gases in the combustion chamber of a gasoline motor cylinder, at the moment of explosion, is in the neighborhood of 3,000 degrees Fahr., while the temperature of the exhaust is from 700 to 900 degrees.

The few automobiles in West Virginia cannot hereafter run over fifteen miles an hour, according to a measure in the legislature. It would puzzle them to run fifteen miles a year in some localities in the state. —*Parkersburg (W. Va.) Journal.*

Detroit's Annual Exhibition Closes.

Most Successful Show Ever Held in Detroit—More than 30,000 Paid Admissions—Zero Weather Curtails Sales.

Special Correspondence.

DETROIT, Feb. 20.—The conclusion to be drawn from the Detroit automobile show, which closed Saturday night in the Light Guard Armory, seems to be that, while the show was a great success from the public standpoint, it can be regarded by those "in the know" as but a handsome baiting proposition. To say this is in no way to cast slight upon the show or to ridicule it, for it was the most successful exhibition that was ever held in Detroit. But in this stage of the public automobile knowledge every show outside of New York and Chicago must be more in the nature of a display to awaken and stimulate interest than to make actual sales. So it was at the Detroit show. While on the surface it was a huge success, with every exhibitor smiling and satisfied, the actual business transacted was small; there were few cash sales during the six days.

More than 30,000 persons paid admission to the Armory during the week, a gain of between 8,000 and 10,000 over last year's attendance, and, as the management was very liberal with "paper" to exhibitors, the press and others, it is probable that the total was raised to 35,000 visitors. Yet the number of direct sales in proportion was surprisingly small, for it seems reasonable to assume that of any crowd that attends an automobile show at least one-half is not drawn there merely out of curiosity, but by real interest in automobiling. Interest means the "automobile fever," which Detroit appears, on the surface at least, to have contracted. But the fact was demonstrated again that although Detroiters have the money to spend they hate to part with it, be it for automobiles, yachts, fast horses, or any other means of pleasure and sport. They will buy real estate in Detroit, but not much else save the necessaries of life.

Still the exhibitors and the management are content, generally speaking, for, as one well-known automobile man stated it, "the advertising is worth the cost and trouble." The automobile must be advertised, and the annual show presents one of the best means, for it lets the prospective purchaser know the individuality of a machine.

The show here would have been a greater success commercially had it not been for the intensely cold weather, which put a stop to the demonstrations, and of course hurt the sale of cars. No motorist, however enthusiastic, and certainly no tender vascillating convert, wants to go bustling about in an automobile with the thermometer standing at 5 or 7 degrees below zero, or even at the ejaculatory cipher itself, where it stood most of the time that the show was on. It was 12 degrees below on the opening night, and 18 below before Tuesday morning.

Although not many visitors actually bought cars at the show, much good seed was sown, and enough prospective customers created to cause the manufacturers and agents to see a roseate tint in the local firmament for the approaching season. Hundreds of appointments were made for demonstration rides as soon as the weather becomes mild. Persons who buy automobiles are like those who buy horses—you have to show them.

The foregoing is as close to a true estimate of the show and its results, robbed of all color and sentiment, as it has been possible to get by study and inquiry throughout the week. Other cities in which local shows will be held during the rest of February and March are likely to find conditions much the same.

The majority of purchases that were made, and of those in prospect, are in the small car class. Harmon J. Hunt, sales manager for the Wolverine, an attractive moderate-priced car built by the Reid Manufacturing Company of Detroit, was feeling most enthusiastic over the sales of four cars in Detroit, one to a Grand Rapids man, two to Ohioans, and six to the New York Casualty Insurance Company for the use of members of its force who have large territories to cover. The officers of the insurance company became interested at the New York show, but the order was placed by its Detroit representative, who was at the local show a good deal during the week. The sale indicates the opening of a new field for the automobile.

An odd feature of the business of the week was the sale of five Cameron air-cooled cars without a machine on the floor to show. The Model L that was to come from the Chicago show was delayed in transit, and then went by mistake to Cleveland, so that it did not arrive at the Detroit Armory until Saturday afternoon, the closing day. Yet before it was set up in the booth of the A. A. House Company, the local agent, five sales had been made by Mr. House and General Sales Manager J. Harold Johnson, of the James Brown Machine Company, of Pawtucket. Two runabouts and one of the larger cars were sold to Detroiters, a touring car to a Grand Rapids man and a runabout to a resident of Albion, Mich.

A list of ten recent purchasers of Reliance cars was posted in the show by Sales Manager G. A. Trout, of the Reliance Automobile Company, one of Detroit's new enterprises.

Four Elmore Pathfinders were sold during the week to Detroit buyers and another to a man living in Lapeer, Mich., by Young & Miller, Detroit agents, from whom comes one of the humorous stories of the show. On Friday afternoon, it is recounted, a "widow in weeds," who evidently had read the newspaper accounts of the running of an Elmore with whisky in a test at the Y. M. C. A. automobile school, approached the stand with some friends and asked:

"Is this the car that drinks whisky?"

Receiving an affirmative reply, she became much interested in the mechanism, demanding to "see the place where the whisky went in." After satisfying her curiosity, she turned to her companions with a sigh and murmured:

"Well, if I only had an Elmore car and a parrot that could swear, I wouldn't miss my poor, dear husband so much."

The largest volume of business done at the show was by the Olds Motor Works, particularly with the new 20-horsepower touring car on which the company is expending its best efforts this year. Edwin S. Anderson and E. D. Trowbridge, representing the cars, stated that more than fifty purchases of the several models had been made, more than half of these being by residents of the interior parts of the state. The company had all its state agents come down to the show and be in attendance at the booth to meet customers from their own towns.

Agencies for Maxwell cars were appointed in many Michigan towns during the week, the Detroit agency being given to a new local combination, the Eldridge-Dingfelder Motor Company, which will conduct a high-class garage at 41 and 43 Washington Boulevard. Mr. Dingfelder makes the Dingfelder automobiles. Sales of Maxwell cars in Detroit and throughout Michigan to agents and individuals for the week aggregated 150 cars, according to Sales Manager F. Freeman Rockwell, of the Maxwell-Briscoe Motor Company, of Tarrytown, N. Y.

Walter White, foreign agent for the White Sewing Machine Company, believes that the efficacy of the automobile show as a seller of cars is at the minimum as yet, and that the shows boost the small manufacturer newly come into the field at the expense of the larger and established maker. However, he regards representation in them as necessary for the advertising secured.

The fifteen actual sales made by the Ford Motor Company, said James J. Couzens, secretary of the company, are not regarded as very satisfactory business, yet the Ford cars interested many visitors who will probably become owners later in the season.

The Packard Motor Car Company did not try to make sales at the show, according to J. H. Brady, the Detroit sales agent, who said that the entire output of 400 Model N cars for 1905 is sold, and that of these only twelve are to go to Detroit owners, unless it becomes possible later to divert some of the company's outside orders to meet the home demand. Half of the 400 cars have already been delivered since last November, says Sales Manager S. D. Waldon.

There were two novelties that attracted much attention during the week. Placed side by side, they would surely have drawn a great crowd, as a study in contrasts. One was the diminutive car La Petite, made by the Detroit Auto Manufacturing Company, and listing at $375. It was the only complete automobile displayed in the gallery. The other was a mammoth four-wheel-drive electric truck built by the Commercial Motor Vehicle Company of Detroit for the Canadian Government, to be used for a traveling exhibit of Canadian products throughout England for the purpose of inducing immigration to the Northwest Territories. Current for the motors is generated by a 16-horsepower four-cylinder gasoline engine direct connected to a 12-kilowatt generator. Five storage battery cells are used for starting the engine, using the generator as a motor and for ignition purposes. The car, when closed ready for the road, is twenty feet long and ten feet high. When opened for exhibition it is twenty-six feet long and eighteen feet high. Three doors on the side are hung from the roof to be turned up on top of the roof, and display samples of wheat, rye, oats and barley. Two doors inside of these open, one to the front and one to the rear; and the interior of the car contains handsomely arranged exhibits of the minerals, woods, grains, fruits and vegetables produced in the northwest.

There are 150 electric lights used when the car is on display, all operated by the gas engine and generator which supplies the motor power when traveling. The engineer's compartment is handsomely fitted up for the accommodation of the engineer and lecturer who travel with the vehicle, and is a marvel of neatness and convenience.

The social side of the show culminated Wednesday night in a big smoker and vaudeville entertainment held in Harmonie Hall. Several hnndred exhibitors and their friends partook of the Dutch luncheon and enjoyed the musical and vaudeville program.

NEW MODELS ON EXHIBITION.

Covered Delivery Wagon Built in Detroit. German Touring Machines.

Special Correspondence.

CHICAGO, Feb. 20.—One of the commercial cars that attracted considerable attention at the automobile show was the delivery wagon of the Rapid Motor Vehicle Co., of Detroit, which had the appearance of being a practical business vehicle. It is of the regular covered delivery wagon type, but the front end and footboard are of unique design. A 15-horsepower double opposed cylinder motor furnishes the power, and is located lengthwise under the body, driving to the rear axle through a planetary transmission and central chain. The frame is of structural iron, strongly built. The 32-inch artillery wheels are shod with solid rubber tires, and run on roller bearings. Total weight, 1,900 pounds.

The Chicago Motorcycle Co. exhibited a runabout propelled by a two-cycle motor of novel construction, in which two pistons are used, each being connected by its rod to a common crank. It is made with either air or water cooled cylinders, and efficiency and reliability to a high degree are claimed. The motor is made by the Chicago Caloric Engine Co., and has been exhibited at previous shows.

The Mead Motor Co., of Chicago, which imports Benz-Parsifal automobiles from the manufacturers in Germany, exhibited two of these machines; one a 24-horsepower four-cylinder car and the other a 12-horsepower car with two-cylinder motor. These cars, which are both of the touring type, have a number of mechanical features in common, such as vertical motors under the hood in front, sliding gear transmission, bevel gear drive, leather faced cone clutches, flat tube radiators, and other parts. The large car, however, has a pressed steel frame and a four-speed gear, while the smaller one has an armored wood frame and a three-speed gear. Lubricating oil is forced to the frictional points by means of the pressure of the exhaust gases, carried to the oiler by a small pipe. Road wheels, both front and rear, are equipped with ball bearings, as is also the transmission gear. A feature worthy of notice is a small tank for carrying kerosene to flush out the cylinders after a run, this practice being considered of much importance in keeping the motor in good condition.

The following cars, nearly all of which are represented here, will be shown: Winton, White, Locomobile, Baker, Cadillac, Buckmobile, Acme, Ford, Franklin, Columbia gasoline and Columbia electric, Pierce, Packard, Oldsmobile, Crawford, Twyford, Wayne, Haynes-Apperson, Knox, and the full Pope line.

GENERAL VIEW OF INTERIOR OF LIGHT GUARD ARMORY DURING DETROIT AUTOMOBILE SHOW WHICH CLOSED SATURDAY, FEBRUARY 18.

EXPECT GOOD WASHINGTON SHOW.

Special Correspondence.

WASHINGTON, Feb. 20.—The members of the local automobile dealers' association are very sanguine that the show to be held here during the last week in March will eclipse anything of the kind ever held in Washington. Every foot of space in the Light Infantry Armory has been taken, and Manager Washington has enough unfilled applications for space to organize a good-sized overflow show, if such a thing were practicable. He is now trying to secure the officers' clubrooms in the armory for exhibition purposes, and if he is successful a number of accessory manufacturers will be enabled to exhibit who otherwise could not get in on account of lack of space.

"Well, Doctors Brown and Smith are going to operate on old Gotrox."

"Is the operation necessary?"

"Why, yes; Brown has a note coming due, and Smith wants an automobile."—*Puck.*

It is quite probable that by next summer there will be an automobile passenger and freight line in operation between Egg Harbor City and May's Landing, N. J. Inquiries as to cost of machines and operation of such a line have, it is said, met with satisfactory responses.

DRASTIC NEW BILL IN N. Y. SENATE.

Senator Grady Introduces Measure Requiring All Users of Highways to Regulate Speed with Regard to Traffic So as Not to Endanger Others.

Special Correspondence.

ALBANY, Feb. 20.— Senator Thomas F. Grady, of New York, introduced a bill in the Senate Saturday which virtually repeals the State automobile law enacted at the request of the owners of automobiles last year.

The measure begins with a declaration of rights, reciting that "All lawfully disposed persons have an equal right to be upon, use and traverse the public highways, roads, streets, avenues and places, in the State, and no person has a right to drive or ride thereon at a rate of speed that may be dangerous to others."

The provisions of the bill are as follows:

All persons driving or riding in carriages, wagons, automobiles, or other vehicles or conveyances, or on bicycles, must regulate their speed so as not to endanger other persons who are or may be upon, traversing or crossing the same highway, street, avenue or place, in any city, town or village, or upon any country road, and no provision of law fixing any speed limit for automobiles or other conveyances shall be construed as giving the right to anyone to operate or ride or drive an automobile or other conveyance at any speed that is dangerous to others, or which at all times and in all places is not regulated and controlled by and adapted to the conditions of the traffic then and there existing with regard to the number and proximity of vehicles and persons, and as to whether or not pedestrians are liable to be endangered while crossing the streets or roadways.

Every person who rides, drives, operates, controls or directs any carriage, wagon, automobile or other vehicle or conveyance, on a bicycle, upon any public highway, road, street, avenue or place, going at a speed which is then and there dangerous to other persons, shall be guilty of a misdemeanor, and upon conviction shall be imprisoned for not less than 30 days and fined not less than $100. And if any injury to any person be caused by or result from such dangerous speed, the person or persons convicted of so causing such injury shall be imprisoned not less than one year or more than two years and fined not less than $1,000 or more than $2,000. And if such injury so caused to any person shall result in death of that person, the person convicted of so causing such injury and death shall be guilty of manslaughter in the second degree.

Every person who rides, drives, operates, controls or directs any carriage, wagon, automobile, or other vehicle or conveyance, or bicycle, on any public highway, road, street, avenue or place, who refuses to decrease the speed thereof, or to stop when called upon to do so by any policeman, constable, or other person authorized to make arrests for violation of law or ordinance, or who attempts by increasing speed to escape or avoid arrest for a violation of this act, shall upon conviction be imprisoned for not less than 30 days, and fined not less than $1,000 in addition to the penalties imposed by section three of this act.

FERRY BOAT BILL NOW LAW.

President Roosevelt has signed the Platt-Goulden bill, and automobiles may now be driven on and off of ferry boats under their own power, the only restriction being that the motors must be stopped while the car is standing on the boat. As this is the usual practice of automobilists, it entails no hardship whatever.

The Platt-Goulden bill is an amendment to Section 4472 of the Revised Statutes of the United States, which provided that automobiles using gasoline for fuel must have their "fires extinguished" before going on board ferry boats, and this was interpreted to mean that motors must be stopped, necessitating the annoyance of pushing or towing of the cars on and off the boats.

ABSURD ILLINOIS BILL.

Heinl Measure Makes Speed Limit 15 Miles, and Requires Licenses.

Special Correspondence.

CHICAGO, Feb. 20.—If the bill introduced in the Illinois legislature at Springfield, for the regulation of automobile locomotion should become a law—but the machine owners do not take the possibility seriously. Representative Heinl, of Jacksonville, has proposed that automobiles be limited to a speed of not more than fifteen miles an hour in the country. In the business portions of the cities this lawmaker would allow the machine to proceed at a rate of five miles an hour.

In addition to these speed limitations this representative of some of the voters of Illinois would require each owner to register with the Secretary of State, and for a fee of $2 receive a State number. Hired chauffeurs must also be registered. Cities or parks are not allowed to give greater privileges to motor cars than are provided in the bill. Fines and imprisonment are provided for the violators of the act.

Section 13 of the proposed law reads as follows:

"On approaching and traversing a bridge, dam, sharp curve, or steep descent, the person operating a motor vehicle shall have it under control and operate it at a speed not greater than one mile in fifteen minutes, and on approaching or traversing a crossing at a speed not greater than is reasonable and proper."

Representative Heinl's bill has been laughed at by the Chicago automobilists, but men at Springfield have declared that active work must be done to defeat it. A provision making it obligatory for the driver of a machine to stop at the signal of a driver of a horse appealed to the country members of the legislature, and of these there are not few. Unless there is immediate action there is a strong possibility that the automobile owners will have a new law to discuss with the higher courts.

CITY ORDINANCE UPHELD.

Circuit Court Affirms Kansas City Police Court Decision.

Special Correspondence

KANSAS CITY, Feb. 18.—The automobile ordinance passed by the council last spring was upheld by Judge Wofford in the criminal division of the Circuit Court Thursday morning. The case went up on an appeal from the central police court, where Fred Patee was fined $10 for violating every provision in the ordinance. The Automobile Club of Kansas City, which is behind Patee, will appeal to the Supreme Court, and a decision should be had within the year.

Patee went to the city attorney when it was decided to make a test case, and told him that he had violated the ordinance, and asked that he be arrested. The charge against him specified that he ran his car in the business district faster than eight miles an hour, and faster than twelve miles in the residence streets; that he carried no lamps at night; that he did not take the examination for competency before the city board, nor pay his operator's license; that he did not carry a number three inches long on his car; that he did not stop when signalled to do so by the driver of a horse; that he sounded no signal at crossings; that he ran his car abreast of another, and that his car made an unusually loud noise.

His attorneys argued that the ordinance was invalid, because to fix arbitrarily a rate of speed as dangerous at all times exceeded the authority of the municipal council. They admitted that the city might forbid immoderate speed, but that what was a dangerous speed in some cases might not be in others.

Judge Wofford said the city had the right to protect its citizens from injury by any reasonable regulation regarding the use of streets. He asked whether Mr. Patee had actually committed the offenses charged, and upon being told that he had, said he must then affirm the decision of the lower court. He did not pass on the legality of the ordinance.

City officials stated after the case had been decided that they would make no effort to collect the operators' tax until after the Supreme Court decision.

The plaintiff had purposely violated all sections of the ordinance, so that it could be tested on all points. The measure is loosely drawn and full of technical flaws, counsel for Mr. Patee says. This is the first time that an automobile case in Kansas City has progressed beyond the police court.

MISSOURI GOOD ROADS BILLS.

Senate Passes Income Tax Measure for Road Improvement Fund.

Special Correspondence.

JEFFERSON CITY, Mo., Feb. 18.—Judging by the number of good roads bills now before the legislature, there will be some laws on this subject enacted at this session. The people over the state are demanding legislation, but at the same time they are not willing to add to the direct taxes to secure good roads, and so the successful bill is sure to be one of those which provide for raising revenue by indirect taxation.

The Senate passed Senator Avery's constitutional amendment resolution to give Missouri an income tax for road improvement purposes last Wednesday. The intention is to tax all incomes of individuals and corporations above $5,000 a year from 2 to 5 per cent., depending upon the excess above $5,000.

It is practically certain that the bill will get to a vote in the House, and if it does it is sure to pass. The proposition is as good as submitted to the voters now. The entire state must pass on the amendment before it can become a part of the state constitution. The amendment cannot become effective for several years.

The resolution for the amendment provides that:—

"Said tax as collected shall be paid into the state treasury and shall constitute a state road fund, and be apportioned to the several counties, cities and towns of the state in the ratio which the number of school children in said counties, cities, and towns shall bear to the whole number of school children in the state, as shown by the last school census, and shall be expended in the construction, reconstruction and improvement of public highways and streets

in such manner and under such supervision as the General Assembly may provide."

The ideas of Governor Folk are embodied in a bill to create a state highway commission.

The bill of Dr. Alonzo Tubbs, author also of the anti-tipping bill, provides that all oil inspectors in the state, of whom there are about 600, shall be put on salaries, the excess of fees to go into the road fund. Another bill by the same author would divert the insurance tax, amounting now to about $200,000 yearly, and increasing at the rate of $20,000 each year, to the roads.

It is also proposed to place in the road fund the $475,000 which the federal government owes Missouri.

Still another bill prescribes a tax for road purposes of 25 cents per $1,000 on the paid-up capital of corporations. The revenue would be about $200,000 annually. This bill has already passed the Senate.

Again, there is a bill to tax the capital stock of all railways, steam, electric and cable, not incorporated under the laws of Missouri, 25 cents on each $1,000 of capital stock, the money to go to the various counties in proportion to the amount of macadam roads, and the fund to be used for macadamizing.

Still another bill contemplates an additional tax on wholesale and retail liquor dealers, while another would place one-half the dramshop tax to the credit of the permanent road fund.

Some of these bills are practically sure of passage.

HEARING ON SAXE-WILSNACK BILLS.

Special Correspondence.

ALBANY, Feb. 20.—There will be a hearing February 28, on the Saxe-Wilsnack automobile bills before the Senate and Assembly Committee on Internal Affairs at the Capitol in Albany. The Saxe and Wilsnack bills provide for the imprisonment of the driver of an automobile upon conviction for the first offense of driving recklessly in excess of the legal speed limit, such imprisonment to be in addition to the usual penalties.

TO OPPOSE BILLS AT ALBANY.

A delegation of prominent New York City automobilists, headed by Winthrop E. Scarritt and Albert R. Shattuck, both ex-presidents of the Automobile Club of America, will go to Albany on Tuesday next, February 28, and there join forces with a number of motorists from other cities in New York State in strongly opposing the harsh automobile measures now pending in the legislature. The objectionable measures are the Grady bill, which seeks to make the accidental killing of a person by an automobilist manslaughter; and the Saxe bill, which, if passed, will permit magistrates to imprison automobilists for first infractions of the automobile speed law. It is believed that the existing law has not had time for a thorough trial, and that the adoption of other and more drastic measures constitutes a breach of faith on the part of the legislators.

BONDING AMENDMENT REPORTED.

Special Telegram.

ALBANY, Feb. 22.—There was a hearing to-day before the Judiciary Committees of the Senate and Assembly on the proposed amendment to the constitution to provide for the issuance of bonds to the amount of $50,000,000 to secure funds for extensive road improvement. W. Pierrepoint White and other prominent highway improvement advocates presented strong arguments in favor of the amendment, which was finally reported favorably, there being no opposition. If the resolution is passed by the legislature at this session it will be submitted to a vote of the people at the November election.

It is thought that little or no money will be appropriated this year by the State for road work under the Higbie-Armstrong law, as favorable action is wanted on the bonding plan, which, if enacted, will make available ample funds for prosecution of road making next year and thereafter.

CHICAGO ORDINANCES VALID.

Special Telegram.

CHICAGO, Feb. 20.—The Appellate Court of Illinois handed down a decision this morning in the matter of the injunction granted last summer by Judge Haney, upon application of John Farson, president of the Chicago Automobile Club, and others, restraining the City of Chicago from enforcing the ordinances requiring the licensing, numbering and lighting of automobiles. The Appellate Court dissolved the injunction and held that the city was free to proceed with the enforcement of the laws.

LOCAL LAW PARAMOUNT

Special Correspondence.

PHILADELPHIA, Feb. 20.—When local and state speed regulations clash the former are paramount, according to a decision of the Supreme Court of Pennsylvania just rendered against Samuel Bell, Jr., who, after appealing successively from the decisions of the lower courts, all the way up from that of the local magistrate in Lower Merion township, has been obliged to acknowledge defeat in the court of last resort.

The plaintiff had been arrested while driving his automobile along a lonely highway at a rate which he estimated at about fifteen miles an hour. He was within the limits of lower Merion township, but had no means of knowing it until the officer who arrested him made the charge before the magistrate. The maximum speed limit in the township is ten miles an hour. Bell appealed to the County Court on the ground that he was well within the limit allowed by the new automobile law of the state. Beaten there, he took the case, backed by the Automobile Club of Philadelphia, to the Superior Court, and finally to the Supreme Court of the state and lost.

TOLEDO VEHICLE TAX BILL

Special Correspondence.

TOLEDO, Feb. 20.—Mayor R. H. Finch is engaged in drawing up a vehicle license ordinance which provides that automobiles shall pay an annual license fee of $4, and that motorcycles shall be taxed half that amount.

Members of the Council, so far as they have expressed their views, are favorable to the proposed ordinance and there is little doubt that it will be effective beginning March 1. There is some opposition to the proposed measure on the part of local owners of automobiles on the ground that the fee is too high. They state that there are few cities in the country which have as high a license fee, and that Toledo should not be an exception in this respect.

The present license ordinances of the city are in bad shape, and the new law was patterned after one adopted by Bowling Green, Ohio, a small city a few miles from Toledo whose similar ordinance was tested through all the courts and found to be legal.

The automobile is no respecter of persons, and is not troubled by feelings of compunction. Therefore, don't try to start the motor with the spark advanced.

DRUMMERS WILL USE AUTOMOBILES.

Special Correspondence.

DETROIT, Feb. 18.—One of the latest ideas in modern business methods is that of a large Western jobbing houses. This concern has a considerable number of men on the road, and conceived the idea of arranging for them to add automobiles to the goods for which they already travel. With this end in view, arrangements were made with the manufacturers of the Reliance touring cars in this city to supply twelve of their standard machines, twelve men having agreed to handle the automobiles in addition to their regular lines. The cars will not only be used as samples, but as means of transportation instead of stages, for reaching towns remote from the railroads, traveling by stage being slow and unsatisfactory as well as expensive. The automobiles will bring the men into touch with a class of buyers who, perhaps, could not easily be reached in any other way. The cars will be of the regular stock touring pattern, and will not be commercial cars in the ordinary sense of the word. They will be brought to the notice of men who, owing to their residing in places out of the way of convenient traveling facilities, might be expected to take very kindly to the "new locomotion," and who will doubtless be impressed by the fact that the machines have been brought to their notice under their own power, and can be seen and demonstrated in actual use. The territory to be covered in this way is extensive, consisting of North and South Dakota, Kansas, Iowa, Nebraska, Wyoming and part of Idaho. Incidentally, the cars will be thoroughly tested out on all kinds of roads, and their ability to "arrive" will be well tried.

NEW HAVEN Y.M.C.A. SCHOOL OPENS.

Special Correspondence.

NEW HAVEN, Feb. 21.—The automobile school of the educational department of the Y.M.C.A. of this city opened last evening with a large attendance of owners, those preparing to become chauffeurs, and also many Yale students who will drive their own machines this summer. Those in charge of the course have received every assurance of success, and the representative gathering of last evening is evidence of the growing popularity of the automobile business.

The course will consist of twenty lectures on the different types of gasoline motors and the forms of power transmission, with practical demonstrations of the various types of cars and actual road work. Lectures will be given on Monday evenings, and shop periods for practical study of the machines on Wednesday and Thursday evenings to small groups of students. The opening lecture was given last evening by Julian F. Denison, a well-known gasoline expert, who will have charge of the course.

POWER BOAT ASSOCIATION ELECTION

At the annual meeting of the American Power Boat Association, to be held at the Hotel Astor, New York, Monday evening, February 27, officers for the ensuing year will be elected. The nominating committee, consisting of L. F. Jackson, Charles P. Tower and Edward M. Maclellan, has submitted the following ticket:

President, J. Howard Wainwright, American Yacht Club; secretary, Anson B. Cole, Manhasset Bay Y. C.; treasurer, Frederick A. Hill, Norwalk Y. C.; measurer, Henry J. Gielow, Atlantic Y. C.; executive committee, Harold Brown, Swampscott Y. C.; J. H. McIntosh, Columbia Y. C.; Alfred Costello, Frontenac Y. C., and George P. Granberry, New Rochelle Y. C.

IMPORTANT CLUB DINNER.

Prominent Officials and Business Men to Attend Good Roads Talks.

Special Correspondence.

SAN FRANCISCO, Feb. 16.—The prospect is that the dinner and smoker of the Automobile Club of California, to be held at the new St. Francis Hotel Saturday night, will be the most important gathering of automobile and good roads interests ever held on the Pacific Coast. The applications for tickets so far indicate an attendance of more than 200 and the attendance of some of the best known capitalists and business men in the city. In addition there will be a full attendance of the members of the Board of Public Works, having charge of the city's streets; of the Board of Park Commissioners and of the local Board of Supervisors. The mayor will also be present and invitations have been accepted by members of the Boards of Supervisors of adjoining counties.

It is intended that the banquet shall inaugurate the club's good roads campaign, and plans for the season will be outlined in the after dinner speeches. R. P. Schwerin, vice-president and general manager of the *Pacific Mail*, is the president of the club and in taking charge of the affair he has insisted that the gathering shall be a representative one. It is intended to make the dinner an annual event. For entertainment some of the best professional talent at present in the city has been secured for vaudeville "stunts," and good music will be provided.

WANTS ITS OWN HOME.

Philadelphia Club to Acquire Clubhouse and Garage Downtown.

Special Correspondence.

PHILADELPHIA, Feb. 20.—Realizing that a clubhouse and garage of its own will cement the membership and provide a headquarters where all could meet on common ground, a committee has been appointed by the Automobile Club of Philadelphia to look over the field with a view of securing a suitable building. This committee is composed of Chairman H. Bartol Brazier, who is also secretary-treasurer of the club, Howard Longstreth and J. Maxwell Bullock.

The present idea is that a building, centrally located and sufficiently large, shall be secured and so altered as to meet the requirements of a clubhouse and garage. The committee will report at the annual meeting, which is scheduled for Monday, March 13.

While the hope of some of the members is that a specially designed clubhouse and garage may be built at once on plans selected by the committee, such an outcome of the present movement is hardly to be expected. Yet, after the matter has been thoroughly threshed out at the annual meeting, a plan for acquiring quarters patterned after those recently opened by the Automobile Club of Germantown, may be adopted. Indeed, it was the success which has attended the suburban club since its new home was opened that started the movement in the A. C. of P.

Next to the new clubhouse project, the matter of greatest importance to be considered at the annual meeting will be the election of officers to serve during the entire twelve months. It is quite likely that, with but few exceptions, the present officers will be re-elected. Four members of the Board of Governors are to be elected for two years. Of these, Isaac Starr, Jr.; H. Bartol Brazier and Ellis Ames Ballard will almost surely succeed themselves, while J. Maxwell Bullock will probably succeed Frank C. Lewin, to whom credit for much of the success of the club since its organization is due. A. N. Chandler will, in all likelihood, be selected to fill the vacancy in the board caused by the resignation of Louis Kolb.

BUFFALO CLUB LEASES NEW ROOMS.

Special Correspondence.

BUFFALO, Feb. 20.—At a prolonged meeting of the Automobile Club of Buffalo, held Wednesday, much business was transacted, the most important being the signing of the lease for the new club rooms in the Teck Theatre Building. Dai H. Lewis, W. H. Baker and H. A. Meldrum were appointed a committee to look after the decorations and fittings of the new quarters. They will rush the work and it is hoped the club will be installed in its new home by March 1.

A committee to represent the club at the auto show in Convention Hall, next month, was appointed by the board of directors as follows: President Augustus H. Knoll, Secretary Dai H. Lewis, H. A. Meldrum, Charles Clifton, W. H. Baker, E. R. Thomas and E. H. Baker. The committee will look after the club's interests at the show.

The club endorsed the automobile school which opened Thursday evening at the Central Y. M. C. A. Dr. Perry E. Doolittle, president of the Toronto A. C., and several local automobile men spoke at the opening session of the school.

CHICAGO CLUB ELECTION.

Special Telegram.

CHICAGO, Feb. 21.—Ira M. Cobe was elected president of the Chicago Automobile Club to-day at a meeting of the directors of the club, John Farson having resigned the presidency because his banking business requires him to spend most of his time in New York. W. G. Lloyd, former second vice-president, was elected first vice-president.

A meeting of the club will be held Thursday night to discuss the draft of a bill prepared by the legislative committee for presentation to the State Legislature next week.

KANSAS CITY CHAUFFEURS' CLUB.

Special Correspondence.

KANSAS CITY, Feb. 18.—The newly organized Chauffeur's Club has appointed Henry Fellars chairman of the committee which is to draft a constitution and by-laws. No officers have yet been elected. The negotiations which were started with the Dealers' Association, but which were broken off owing to the Chicago Show, have been resumed. The club agrees to furnish competent men, provided the employers hire only men recommended by the club. Four classes of employees are specified by the club, from full-fledged driver to mechanic's helper.

COLORADO MEET PROGRAM.

Pike's Peak Climb to Be Supplemented by Road Events.

Special Correspondence.

DENVER, Feb. 18.—Details of the automobile meeting to be held in Colorado the latter part of August are being completed rapidly. Besides the climb up Pike's Peak, one day will be devoted to an automobile run between Colorado Springs and Denver. This run will be divided into three sections, the first comprised solely of pleasure drivers, the second division constituting an endurance test, with suitable restrictions and point markings, and the third comprised of "scorchers," who will attempt to lower the record between the two cities.

Several thousand souvenir buttons, bearing the inscription "Pike's Peak or Bust," were distributed at the Chicago Show by Secretary-Treasurer Wahlgreen, of the Denver-Overland Racing Association. Great interest is being taken in the meet, and indications point to the receipt of many entries in all the events and divisions. Besides Webb Jay and Earl Kiser, who entered some time ago for the mountain climb, the entries of Jerome A. Ellis, Dr. H. E. Thomas and H. Hultman, of Chicago, have been received for the same event.

PRINTED WITH AN AUTO.

California Newspaper Sets Type and Runs Presses with an Auto.

Special Correspondence.

SAN FRANCISCO, Feb. 16.—Much newspaper literature has been devoted to the automobile, but never before, it is believed, has the automobile been devoted to literature in the practical way that occurred last week at Eureka, in this State. On February 7 the electric power for the linotype machines and presses of the *Daily Humboldt Standard* gave out just as the hour when the "first side" of the edition was being run off.

Just at the psychological moment, N. H. Pine came along in an Oldsmobile and offered to chug into the breach. The car was backed to the side door of the press room, which opened on the alley just in front of the press, the rear axle was jacked up and one of the rear wheels was belted to the countershaft over the press. The countershaft being belted to the line-shaft, the power was thus transmitted to all the machinery of the office. On account of the low power of the engine the speed development was not great, but was sufficient to enable the forms on the press to be run off and the copy on the hooks to be cleaned up ready for the running of the second and last side of the paper.

Fifteen minutes after the breakdown Pine's little Olds was busily puffing away to the accompaniment of the rumble of the large press and the rattle of the linotypes, while every wheel in the shop was turning with the power furnished by the gasoline engine of the little runabout.

In order to increase the power for running off the outside of the paper, the management of the *Standard* requested the loan of H. L. Rick's White steam touring car, and had just placed it in position when the electric power again reported for duty. The incident illustrates the broad field of usefulness of the auto.

A hack-saw is an inexpensive tool, and is of great utility for rapidly doing cutting-off work that would require a long time with a file.

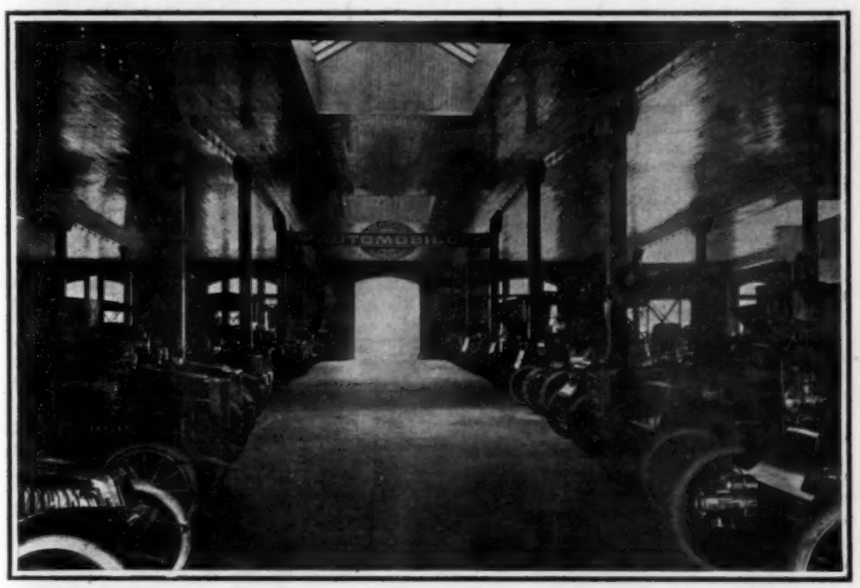
MODERN PITTSBURG GARAGE.

Keystone Company Equipped for Storing, Charging and Testing Cars.

Special Correspondence.

PITTSBURG, Pa., Feb. 20.—The growth of the automobile sentiment and the consequent increase in trade in Greater Pittsburg during the last two years is no better shown than in the big establishments of the leading local firms. Chief of these in many ways is the business home of the Keystone Automobile Company, at 5905-5915 Center avenue, East End. The place is within a stone's throw of the new home of the Automobile Club of Pittsburg, and on the leading avenue connected with the boulevards.

About a year ago the Keystone Company took over the business of the Pittsburg Automobile Company. It began at once to make extensive improvements to the building, which have resulted in the largest and best appointed garage in western Pennsylvania, with, perhaps, a single exception. The building is a substantial brick structure



GENERAL VIEW OF INTERIOR OF KEYSTONE AUTOMOBILE COMPANY'S GARAGE, EAST END, PITTSBURG.

with a frontage of 170 feet on Center avenue, and has more than 24,000 square feet of floor space, all on one floor. The space is so arranged that more than 200 cars can be stored on the floor, leaving plenty of room for two broad aisles and the offices of the company.

The accompanying photograph shows a good interior view of the building as it appears now, with dozens of automobiles stored for the winter season. In the end of the building to the right are the new offices of the company, three large, well-lighted rooms. One of these is a reception room, designed especially for ladies, which is handsomely furnished. The offices have lately been finished and are well stocked with the trophies which the White machines, under the direction of O. E. Vestal, manager of the company, and other local automobilists, have won in the last two years in the big meets around Pittsburg.

In the Heberton Hill climbing contest last season, Mr. Vestal, with a 10-horsepower White car, made the best time of any car under 20 horsepower. The same car was entered by Mr. Vestal in five events in the Brunots Island races, in October, and won the first four. He is called the "steam enthusiast" in local auto-circles, and is one of the leading spirits in the Automobile Club of Pittsburg.

In another corner of the big room is the Exide battery department of the company. This is one of the most important adjuncts to its business, as twelve machines can easily be charged at one time. The company carries from twenty-five to thirty-one electric cars all the time, and their popularity is evidenced by the rapidly increasing sales during the past season. Ladies especially are taking to the neat, easy running machines.

Near the storage depot is the testing plant. Instead of taking the machines out on the street, which is often very inconvenient, and never entirely satisfactory, the company uses dynamos for measuring the power output of cars. Every machine received at the garage to be put on sale is tested thoroughly, to see if it comes up to the standard of excellence claimed for it. The cars are blocked up and the rear wheels are belted to the dynamos. Tests can be made up to 40-horsepower machines. The plant is used not only for the company's own service, but is in great demand by outsiders. A vulcanizing department with all modern appliances for repairing tires and the like has also been installed lately.

The Keystone Automobile Company sold last season seventy autos, most of which were White steamers. The company has also made good sales of the Stevens-Duryea, Columbia, Pope-Hartford and Pope-Tribune machines. The officers of the company are: O. E. Vestal, president and manager; A. M. Diehl, secretary.

RECENT INCORPORATIONS.

Scranton Garage & Motor Car Co., Scranton, Pa.; capital $25,000.

State Automobile & Supply Co., Cleveland, O.; capital $5,000.

Johnson Motor Co., Chester, Pa.; capital $10,000.

Christie Direct Action Motor Car Co., New York; capital, $300,000; automobile patents. Directors, C. G. Christie, D. H. Haywood and N. T. M. Melliss, all of New York.

AUTO BOATS BURNED.

A Dozen Lost in Pungs-Finch Fire—Auto Department Unharmed.

Special Correspondence.

DETROIT, Feb, 18.—About a dozen fast automobile boats were burned in the fire that destroyed the boiler and power plant, the boat building department and pattern and forge shops of the Pungs-Finch Auto & Gas Engine Company plant at 1524 Jefferson avenue, last Wednesday. The automobile boats and a new mail boat for use on the Detroit River were nearly completed. Among the launches was the fast auto boat *W. P. A.*, built by the company last year, and which had a record of twenty-four miles an hour.

The automobile department and the machine shops fortunately were not injured. Provision was made at once for heating this part of the plant, and by installing automobile motors to furnish power the automobile department and machine shops were running regularly the next day, so that there was practically no delay in producing the Pungs-Finch cars.

The burned section of the plant will be rebuilt at once. The ruins present a picturesque appearance, as with the temperature at 17 degrees below zero while the fire was in progress, the water thrown by the firemen froze as fast as it fell.

BIG SEASON IN TOLEDO.

Special Correspondence.

TOLEDO, Feb. 18.—Every garage and automobile factory in Toledo is crowded with machines, and dealers confidently expect the coming season to be the best they have yet experienced. Their reasons for this belief are based on the large number of prospective buyers who daily visit the various storage rooms, stating that they intend to buy new cars this year. In anticipation, the dealers have on hand a large stock and the assortment is the largest and best that has ever been seen here.

Both the local automobile factories are working to their fullest extent and are daily booking orders. The Pope Motor Car Company, which finished a large addition to its plant less than a year ago, now finds that it is too small to meet the requirements of the business and the company is now planning to increase the capacity of its plant though probably no addition will be made until after the season's rush is over. The company now occupies about all the available property near its factory, and when it decides on the addition it will mean another large plant. More than 1,000 men are now employed, the plant being one of the largest in the city.

Every bit of available storage room in the immense plant is now filled, but the company will begin filling on a larger scale the orders it has been receiving for some months past. The number of orders to date is the largest the company has received since its organization.

NOT LEASED BY INDEPENDENTS.

Special Telegram.

CHICAGO, Feb. 21.—The report that the independent, or unlicensed manufacturers of gasoline automobiles had secured a lease of the Coliseum Building for a term of three years, for the purpose of holding automobile shows in opposition to the Association of Licensed Automobile Manufacturers is denied here by all interested parties. It is declared that the independents have no organization, for want of a leader. While Thos. B. Jeffery & Co. stay outside of the licensed combination, they are not molested and they make no fight.

Several of the automobile dealers of Washington, D. C., who have an extensive storage business, declare that the quantity of gasoline they are permitted to keep on hand under the present regulations (50 gallons) is not sufficient to meet their requirements, and they have therefore united in a petition to the District Commissioners to amend the regulations so as to permit of the storage at one time of from 100 to 120 gallons in underground tanks. They make the point that there is greater danger in frequent filling of the 50-gallon tank than there would be in the less frequent filling of the larger tanks proposed. It is expected the Commissioners will amend the regulations to conform with the wishes of the automobile dealers.

The American De Dietrich Company, of New York City, which handled De Dietrich cars, has sold its business outright to the parent company in France, which will establish a new concern, under the direction of Baron Frederic de Turckheim, to be known as the De Dietrich Company, American Branch. The new concern will occupy the same premises as the old, at 1 1-2 West Thirty-fourth street, New York, and will be under the management of M. de Brou. It is understood that R. E. Jarrige, who was president of the American De Dietrich Company, has received a considerable sum for his holdings.

C. B. Doddridge, formerly general manager of the Missouri Pacific railroad, and Winfield Denton of Leavenworth, have purchased land near the corner of Fifteenth street and Troost avenue, Kansas City, and will construct a garage in the spring. The land cost $10,000, and the entire tract, 100 by 160 feet, is to be occupied by the building. A company is to be organized with $50,000 capital and is to be managed by Mr. Doddridge's son. The line of cars the company is to carry has not been announced. It is the intention to be ready for business by May.

The Wayne Automobile Co., of Detroit, recently received a telegram from W. L. Fry, of San Bernardino, California, stating that a run had been made from Los Angeles to San Bernardino, a distance of seventy-one miles, in two and a half hours, breaking all previous records for this trip. Heavy sand and a strong wind were encountered. The territory through which this run was made is very sparsely inhabited, and there are no state laws restricting speed in the open country.

The manufacturers of the Oldsmobile state that they had twice as many agents at the Chicago automobile show this year as last, and that the business done was eminently satisfactory. In January, 1905, three times as many machines were shipped as during the corresponding month last year, the demand having begun earlier and being heavier as well. The large stock of cars on hand has made it possible to take care of orders promptly.

The business of the J. S. Leggett Mfg. Co., of Syracuse, N. Y., has been sold to the Iroquois Motor Car Co., manufacturers of the Iroquois automobiles, and a plant having a floor space of 90,000 feet has been purchased at Seneca Falls, N. Y., where the Iroquois touring cars will be built hereafter.

The Standard Automobile Co., of New York City, handling the French Decauville automobiles, has concluded a deal which will result in the housing of the company's business in a special building on West Fifty-fifth street, with a frontage on Broadway. A piece of land 75 by 200 feet has been leased for a term of twenty-one years, and plans for the building are well under way.

The repair department of the Acme Motor Car & Repair Co., of No. 20 Slater St., Cleveland, Ohio, has been purchased by the Clark Carbureter Co., which will carry on automobile repair work in addition to the manufacture of the Clark carbureter. The Acme Motor Car & Repair Co. will continue the manufacture of automobile specialties in which it has been engaged heretofore.

Charles Coddington, an agent for Rambler automobiles, recently made a successful trip in a Rambler surrey, calling on various Rambler agencies throughout the state of Pensylvania and giving demonstrations to prospective purchasers. Notices were sent ahead announcing the arrival of the car, and though the weather was frequently cold and stormy, the machine went through the test well.

The Missouri Valley Motor Co., of Kansas City, Mo., has been formed and will erect a garage, for which land has been purchased near the corner of Fifteenth St. and Troost Ave., Kansas City. In addition to a garage, the building will contain a salesroom and repair shop, and will be finished some time in April. Winfield Denton, W. B. Doddridge and P. B. Doddridge, all of Kansas City, are the principals.

A. B. Shultz, head designer of the E. R. Thomas Motor Co., of Buffalo, N. Y., returned from the Florida automobile races with a desire to lay down a 2,000-pound six-cylinder racing car of 100 horsepower. A large addition will be built to the Thomas factory No. 1, on Niagara St., as soon as weather permits, and will contain new offices, drafting rooms, stock rooms and additional factory space.

The Simpson-Strauss Automobile Company has been organized in Louisville, Ky., by C. D. Simpson, a practical automobile man, and John Mason Strauss, the well-known musician. The quarters formerly occupied by the Motor Vehicle Company, which recently went into bankruptcy, have been secured. A general storage and repair business will be conducted, and the Franklin and Pierce cars will be handled.

Winton automobiles will be handled in the territory between Nyack and Albany, N. Y., by Youngs & Co., of Newburg, N. Y., a firm recently incorporated. Arrangements have been made for occupying a garage at 249 Grand St., which will be equipped for all kinds of repair work on automobiles. The new premises will be opened about April 1.

The I. S. Remsen Mfg. Co., of 750 Grand St., Brooklyn, N. Y., which manufactures and imports carriages, harness and other horse goods, has decided to enter the automobile business, and has secured the agency for the Locomobile and Buick cars for Brooklyn, Queens and Long Island. The sales department will be under the management of Lew H. Allen.

The Western Automobile Co., Incorporated, of 1409 Michigan Ave., Chicago, will handle the Maxwell cars through a large territory adjacent to Chicago, and will carry a stock of parts and supplies as well. John R. Bensley is president of the company; Benjamin Briscoe, vice-president; Luke I. Wilson, treasurer, and Daniel B. Southard, secretary.

The question of automobile insurance has been taken up by H. F. Tuzo & Co., 45 Broadway, New York City, who issue a policy covering various kinds of loss on automobiles. A feature of this policy is that partial loss does not annul the policy, the car being covered throughout the term of the contract.

C. S. Henshaw, New England representative of the E. R. Thomas Motor Co., of Buffalo, N. Y., states that the Thomas Flyer is now represented in every town of importance in New England. William Bliss, president of the B. & A. R. R., is one of the recent purchasers of Thomas cars.

A road map of the state of New Jersey has been published by C. S. Mendenhall, 512 Race St., Cincinnati, O., with special reference to the requirements of automobilists. It is large and well printed on good, tough paper. The same publisher issues road maps of several other states.

The San Francisco fire department has just put into commission three Autocars for the use of division chiefs. Two will be in regular use and the third held in reserve. A steam car was ordered for the chief of the department some time ago, but has not been used.

The Fisk Rubber company has opened its branch at 1330 Main street, Kansas City, and is equipped to handle all kinds of heavy vulcanizing, something not before attempted here. Mr. Belt, formerly of Omaha, is manager.

The Diamond Rubber Co., of Akron, O., will open a branch in Atlanta, Ga., about March 1. A building at 94 N. Pryor St. is being fitted up for the company's occupancy and a salesroom and repair station will be established.

The Greer Motor Car Co., of 1421 Michigan Ave., Chicago, has arranged to handle for the coming season the Michigan, St. Louis and Duryea cars, and is looking for a high-powered four-cylinder machine to complete the line.

The Atlas Automobile Co., of Pitsburg, Pa., has purchased the Calvary Church property on Penn Ave. and Station St., and will use it as a garage for an automobile livery business after April 1.

The Charles N. Wood Electric Co., 246 Summer St., Boston, has been appointed agent for the sale of the gears manufactured by the R. D. Nuttall Co., Pittsburg, Pa.

The Washington agency for the Ford has been transferred from A. L. Kull & Co. to Chas. E. Miller & Bro. The former concern has added the Wayne car to its line.

C. A. Coey & Co., of 5313 Cottage Grove Ave., Chicago, will enter the automobile sundries jobbing business shortly, and are preparing a catalogue of their goods.

George Hagg is to open a garage at 1425 Walnut street, Kansas City, Mo.